SEP 29 1947

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Occupational HAZARDS

THERE'S PROFIT IN PREVENTION

OCTOBER
1947

ROUTE TO
YOUR PLANT
E PROTECTION
EN: FEATURE
SECTION ON
E PROTECTION
OR INDUSTRY

IN THIS ISSUE:

SOME FACTS ABOUT SAFETY SHOES
NEW PRODUCT REVIEW
EFFICIENT ELECTRICAL MAINTENANCE

THE INVISIBLE TOOL...

● **Clean Air . . . You can't see it . . . but there's no denying its importance. Increased efficiency, greater production, fewer rejects . . . reduced absenteeism . . . all contribute to more profitable operation of any plant.**

A Kirk & Blum System works wonders where a fume condition exists . . . clearing the contaminated, murky atmosphere and brightening not only your plant but your profit picture as well.

KIRK & BLUM Engineers will be glad to show you how a K & B System can improve your production . . . actually pay for itself over a period of time. The Kirk & Blum Mfg. Co., 2802 Spring Grove Ave., Cincinnati 25, Ohio.

Removing fumes from soldering and brazing operations of The Lunkenheimer Company, famous valve manufacturers.

KIRK AND BLUM
DUST CONTROL

WRITE FOR ANY OF THESE BOOKS TODAY:
"Dust Collecting Systems for Metal Industries"
"Blower Systems for Woodworking Plants"
"Fan Systems for Various Industries"

An Organization of Engineers and Mechanics

©C1B 98455

PRESENTING...

Saftopedics by Iron Age

THE GREATEST ADVANCE IN PROTECTIVE FOOTWEAR SINCE THE INVENTION OF THE STEEL TOE

COMFORT FROM THE FIRST STEP . . . *Saftopedics* by Iron Age are no ordinary safety shoes. Into their making has gone all the craftsmenship; the design advances, the comfort producing features that were previously found only in high priced pediformic shoes produced in limited quantities. This exclusive Iron Age development is entirely new to the safety shoe field.

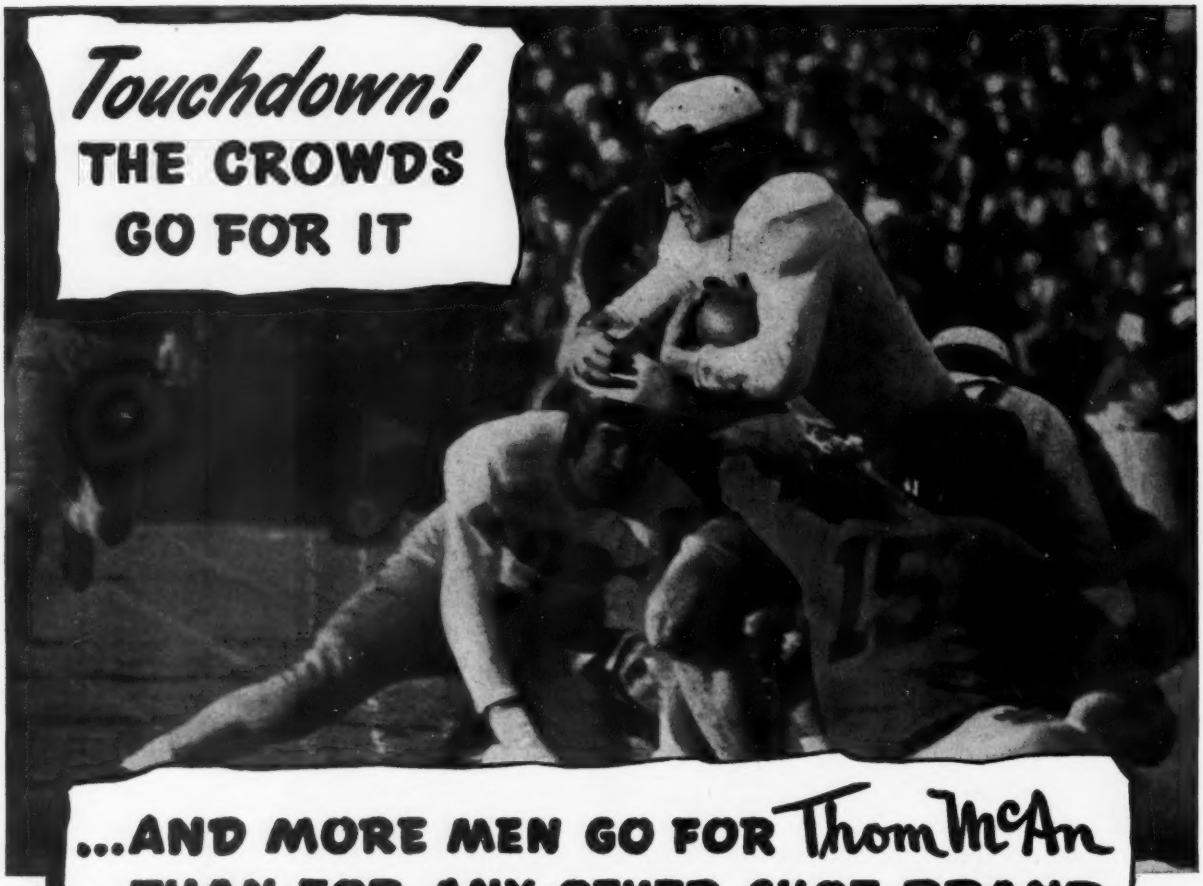
For long wear and supreme comfort you can do your workers no greater service than to stock *Saftopedics* by Iron Age. And indirectly *you'll* benefit. For with the foot ease and improved posture that *Saftopedics* provide, your employees will be less likely to tire at their tasks. *Write for catalog.* Iron Age Division, H. Childs & Co., Inc., Pittsburgh 22, Pa.

Iron Age cordially invites
Mr. & Mrs. Safety Director
to attend the formal preview of
Saftopedics by Iron Age at the
National Safety Congress,
Chicago Booth No. 121
October 6-9, 1947

The *Saftopedic* Last

The *Saftopedic* last pictured here is scientifically proportioned to the mold of the foot. It supports the arch; gives balance to the step. And for assured comfort there's an Armstrong cork filler between the insole and outsole; a wide steel shank, an inside wedge heel and a resilient arch cushion pad.

Iron Age SAFETY SHOES



Touchdown! THE CROWDS GO FOR IT

...AND MORE MEN GO FOR Thom McAn THAN FOR ANY OTHER SHOE BRAND

For complete foot safety, your men must wear Safety Shoes *willingly* — all day, every day. Their willingness is their constant protection — the kind of protection you want them to have.

To insure their willingness, make Safety Shoes available to your men in a brand they know and trust — Thom McAn. In plant after plant we've proven that when Thom McAn Safety Shoes are made available — workers do wear them willingly. That means increased protection that piles up new foot safety records.

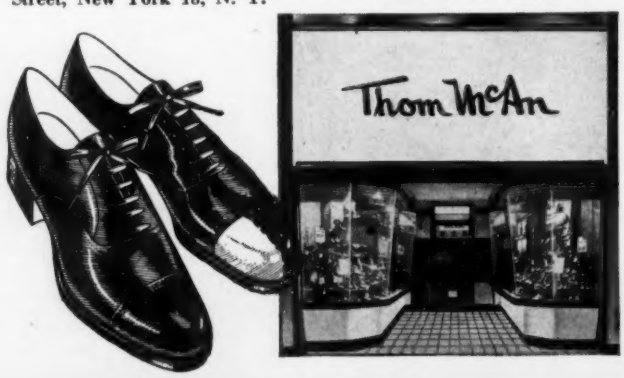
Make Thom McAn Safety Shoes Available To Your Men One Of These Easy Ways:

1. At Absolutely No Cost To You — the nearest Thom McAn Store will stock Safety Shoes for your plant. Trained Thom McAn Fitters insure your men the utmost in foot comfort.

2. If no Thom McAn Store is near you, or if you prefer to continue your own Plant Safety Shoe Department — we'll sell Thom McAn Safety Shoes directly to you at special wholesale prices.

For complete details write today to: Thom McAn Safety Shoe Division, 25 W. 43rd Street, New York 18, N. Y.

Make this store your Safety Shoe Dept.



THOM McAN — THE SHOE EVERYBODY KNOWS — AND ALMOST EVERYBODY WEARS

Jackson's *New* Headrest Goggles

• Light and Easy to Wear • Simple and Easy to Adjust • Practical and Easy to Raise and Lower

LENSES, standard 50 mm. size, are available in shades from 3 through 8. They are held in individual eye cups. Cover glasses protect the filter lenses from pitting.

EYE CUPS are of moulded plastic, joined together flexibly, so they may be easily fitted against the face of the wearer. The outside of each eye cup has ventilating screen, and baffle plate, which prevent fogging, yet keep flying particles and stray light rays from reaching the wearer's eyes.

GOGGLE ASSEMBLY is hinged from the sides of the headrest by telescopic arms. Concealed springs hold goggles gently against the face.

HEADREST distributes the weight over the entire head. It is of light, easy to clean plastic and easily adjusted to any head size. Sweatband adds to the wearer's comfort.

Goggles in protective position. They may be worn over prescription glasses.

To raise goggles, pull forward and up in one operation. Prescription glasses do not interfere.

In "off-guard" position, goggles rest against headrest, are put "on-guard" again in less than a second.

For WELDING, available in two types:

Type W-50, as shown above, with plastic headrest and telescopic arms.

Type WR-50, same goggle assembly furnished with elastic head band.

Also available for CHIPPING AND GRINDING:

Type G-50 as shown above. but without baffle plates. Clear, hardened lenses.

Type GR-50, same goggle assembly furnished with elastic head band.

JACKSON PRODUCTS

31739 Mound Road, Warren, Michigan

From the Complete *Finnell* Line

YOU CAN CHOOSE *EXACTLY*

The Floor-Maintenance Equipment You Need

That is because *Finnell* makes machines for *every* type of floor care and in sizes designed to fit specific needs. From the complete *Finnell* line, it is possible for you to choose equipment that provides the greatest brush coverage consistent with the area and arrangement of your floors . . . whether the equipment is for wet scrubbing, dry scrubbing, dry cleaning, waxing, or polishing.

The *Finnell* Scrubber-Vacuum shown at right (one of several) speeds the cleaning of large-area floors. It is self-propelled and a complete cleaning unit *all in one.* Applies the cleanser, scrubs, rinses if required, and picks up. Has a cleaning capacity up to 8,750 sq. ft. per hour!

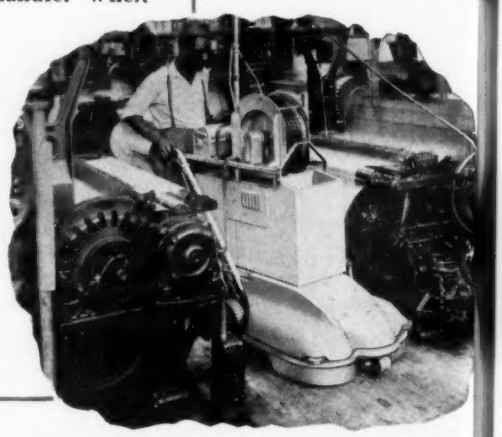
The Motor-Weighted *Finnell* shown below at left is equipped with a *Feather-Touch* Safety Switch that provides *complete* automatic switch control. Switch works with either hand from either side of handle. When handle is released, machine stops. Self-propelled . . . glides over floor with virtually effortless guidance. Four sizes: 11, 15, 18, and 21-inch brush diameter. Inset shows machine with *Finnell* Dispenser for hot waxing.

The *Finnell* Dry Scrubber shown below at right cleans grease-caked floors in *one-tenth* the man-hour time required when hand-spudding. Has self-sharpening brush feature. Adaptable to wet scrubbing, steel-wooling, waxing, polishing.

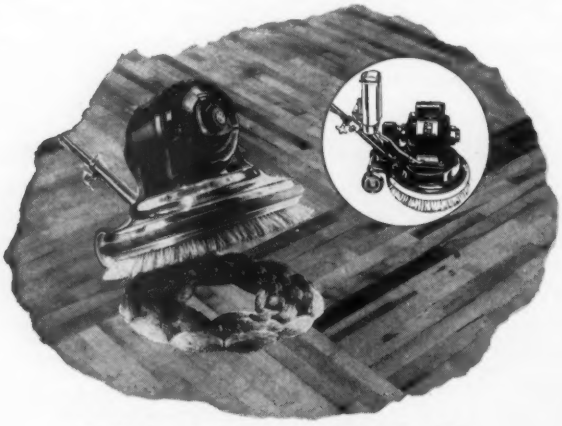
Finnell also makes a full line of *Cleansers, Sealers,* and *Waxes,* as well as *Steel-Wool Pads, Mop Trucks,* and other accessory equipment. For consultation, free floor survey, or literature, phone or write nearest *Finnell* branch or Finnell System, Inc., 3510 East Street, Elkhart, Indiana. Canadian Office: Ottawa, Ontario.

See the
Finnell Exhibit
AT THE
SAFETY CONGRESS
Chicago, October 6-10
Space 50

Three of MORE THAN A SCORE . . . of Models and Sizes . . . Each Designed to Meet Specific Needs



A *Finnell* Scrubber-Vacuum for Cleaning Large-Area Floors.



A Motor-Weighted *Finnell* for Dry Cleaning, Polishing, Waxing. Also Wet Scrubs, Sands, Grinds.

A *Finnell* Dry Scrubber for Cleaning Grease-Caked Floors.

FINNELL SYSTEM, INC.

Pioneers and Specialists in
FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

Occupational HAZARDS

VOLUME 9 • No. 12

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In the Glare of the Torch—think of **WILLSON**

Style CW60

ROOM WANTED FOR SPECTACLES? . . . There's comfort for wearers of prescription glasses in Willson Cover-Alls.* And the adjustable leather bridge rests lightly on the nose without pressure. Willson-Weld* lenses in the shade you specify, of course.

Style RW50

GAS WELDERS GO FOR IT . . . Assured protection of Willson-Weld lenses and comfortable face fit make this goggle day-in, day-out favorite for flame cutting and cleaning as well as welding. Indirect ventilating ports exclude glare.

Style DC50

FOR EYES THAT LEAD A DOUBLE LIFE . . . From welding to chipping with a flip of the wrist! Willson-Weld lenses in separate frames flip up to leave eyes protected by clear, Super-Tough* lenses.

*Reg. U. S. Pat. Off.

For complete information on these products and their application, as well as many more eye and respiratory protective devices, get in touch with your nearest Willson distributor or write us direct.

GOGGLES • RESPIRATORS • GAS MASKS • HELMETS

DOUBLE WILLSON

PRODUCTS INCORPORATED

Established 1870

209 Washington Street • Reading, Penna.

PROTECTION WHERE NEEDED

Visit HY-TEST
Stevens Hotel, Booth 97
National Safety Congress and Exposition
Chicago, October 6-10

H742-1. Men's Black Calf Blucher Oxford, Oak Leather Sole, Half Rubber Heel.

Insure Workers Feet In Sure Protection

with HY-TEST *Safety Shoes*

It's elementary. Even schoolboys know you've gotta' have protection where needed so blows don't hurt. Hy-Test Safety Shoes use that principle to sidetrack accidents. The *Anchor-Flange** Steel Box Toe has book learnin' back of it. Physicists figured out how to make it stand up under greater pressures, harder impacts. It's saved workers from a lot of punishment. Hy-Test Safety Shoes are comfortable and long wearing . . . made of all leather in vital parts. Sizes are 5 to 15 widths AA to EEE.

HY-TEST SAFETY SHOES

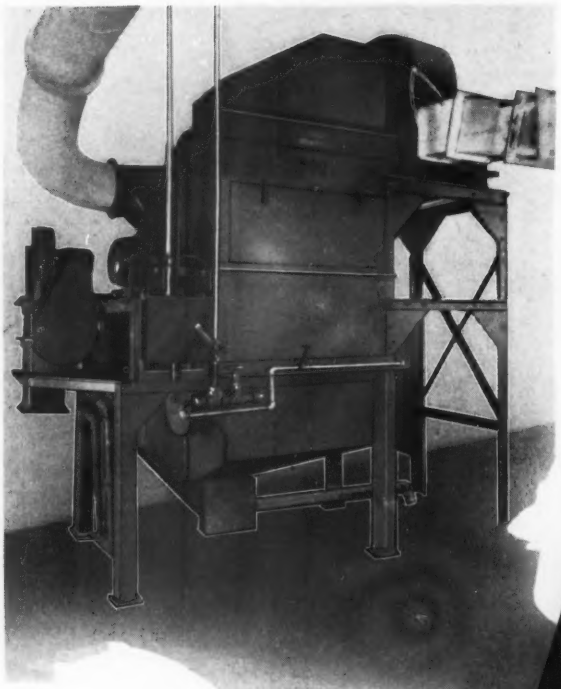
THE WORLD'S LARGEST SELLING SAFETY SHOE

HY-TEST *Safety Shoes*

***ANCHOR FLANGE STEEL BOX TOE**

This flange adds extra strength to the steel arch's sidewall. Anchored between insole and outsole, it also serves to resist shifting, tilting and cutting through outsole under impact.

HY-TEST DIVISION • INTERNATIONAL SHOE COMPANY • ST. LOUIS 3, MO. • EASTERN OFFICE • MANCHESTER, N. H.



first

to DEVELOP and IMPROVE standard methods of collecting DUST & harmful FUMES with Efficiency and Safety!

★

Hydro Whirl

PETERS-DALTON

INCORPORATED

17904 RYAN ROAD • DETROIT 12, MICHIGAN

HYDRO-WHIRL DUST COLLECTORS AND SPRAY BOOTHS—INDUSTRIAL OVENS, WASHERS AND VENTILATING SYSTEMS

MAIL COUPON TODAY

PETERS-DALTON, INC.
17904 Ryan Road, Detroit 12, Mich.

GENTLEMEN:

- ☐ Please have a representative call
- ☐ Please send your latest literature

We are interested in:

- ☐ A complete finishing system
- ☐ Metal parts washers
- ☐ Paint spray booths
- ☐ Drying and baking ovens

Signed _____ Company _____

Address _____

ARE YOUR WORKERS WASHING WITH *FIRE?*

Of all the precious assets your plant possesses, none is more important than the hands of your workers! And dangerous undesirables in any worker's washroom are "fiery" hand cleaners whose strong alkaline or harshly abrasive action tends to irritate or injure the skin's surface, making it more susceptible to infection.

In many instances, authorities say: "Harsh skin cleansers have frequently been found to be the actual causes of occupational dermatitis which before investigation seemed to have been caused by the chemicals manufactured or handled."

West Sulpho Hand Cleaner—a liquid skin cleanser made of sulphonated vegetable oil—is one of your best safeguards against this condition.

Neither dangerously high nor ineffectually low, Sulpho's pH is ideally neutral; its emulsive action gentle, not grinding.

An aid in cutting down costly absenteeism, Sulpho is designed to *get out* soil, grease and grime *without harming or defatting sensitive dry skin.*

Sulpho is one of hundreds of products developed by West for the promotion of effective sanitation. Consult with one of a nationwide staff of over 475 experienced West representatives.

WEST DISINFECTING Company

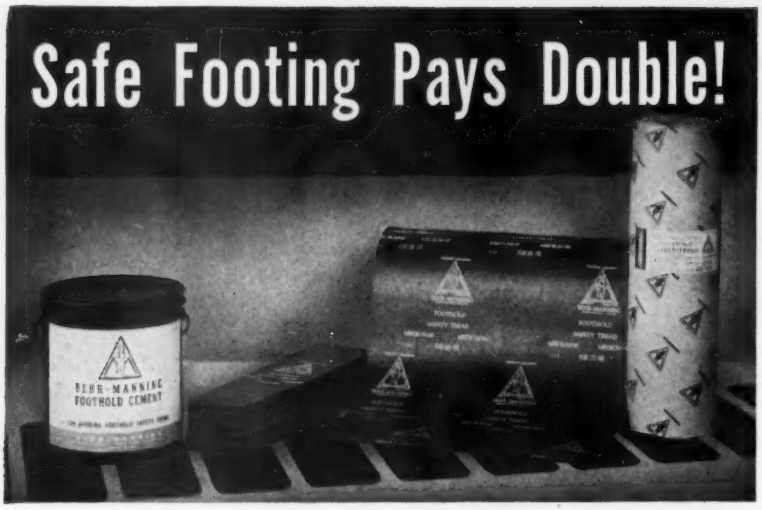
Products That Promote Sanitation

42-16 West Street, Long Island City 1, New York, N. Y.

BRANCHES IN PRINCIPAL CITIES OF UNITED STATES AND CANADA

CLEANSING DISINFECTANTS • INSECTICIDES • KOTEX VENDING MACHINES
PAPER TOWELS • AUTOMATIC DEODORIZING APPLIANCES • LIQUID SOAPS

Safe Footing Pays Double!



FOOTHOLD SAFETY TREAD

PREVENTS FALLS • SPEEDS FOOTWORK

Freedom from falls and freedom from the fear of falls pay twice. One insures a savings on insurance and time losses, the other permits faster movement in hazardous areas where workers must watch out for slipping when lifting, carrying or trucking.

Foothold Safety Tread is the ideal non-slip medium. It prevents falls and speeds footwork because it provides a "sandpaper-rough" surface that holds. Foothold Safety Tread is built on the same principle as heavy duty waterproof abrasive cloth. It is provided in roll or cleat form for instant application to any smooth clean floor surface, permitting waste-free "pin-point" application to localized hazard areas on ramps, stairs, aisles and walkways.

Quicker and easier to install than either mastic or metal flooring, Foothold Safety Tread has greater non-skid surface and is fully effective when wet with water or oil. Completely waterproof and weatherproof, it resists oil, grease, alkalies and mild acids—and can be used immediately after laying.

Write for descriptive booklet and samples or ask for our special 12-Cleat Safety Kit, Price $7.50.

BEHR-MANNING · TROY, N.Y.

(DIVISION OF NORTON COMPANY)

ALSO QUALITY COATED ABRASIVES SINCE 1872

Do you have any questions, theories or ideas concerning industrial health or safety? If you want to give them a good airing—send 'em along. We'll publish all space permits.

"Randolph Data Guide"

OCCUPATIONAL HAZARDS:

Will you please have the "Randolph Data Guide" consisting of 222 fire facts as announced in a recent issue of OCCUPATIONAL HAZARDS, sent me. I would also like to have another issue of your October issue, covering the subject "Using Butane or Propane."

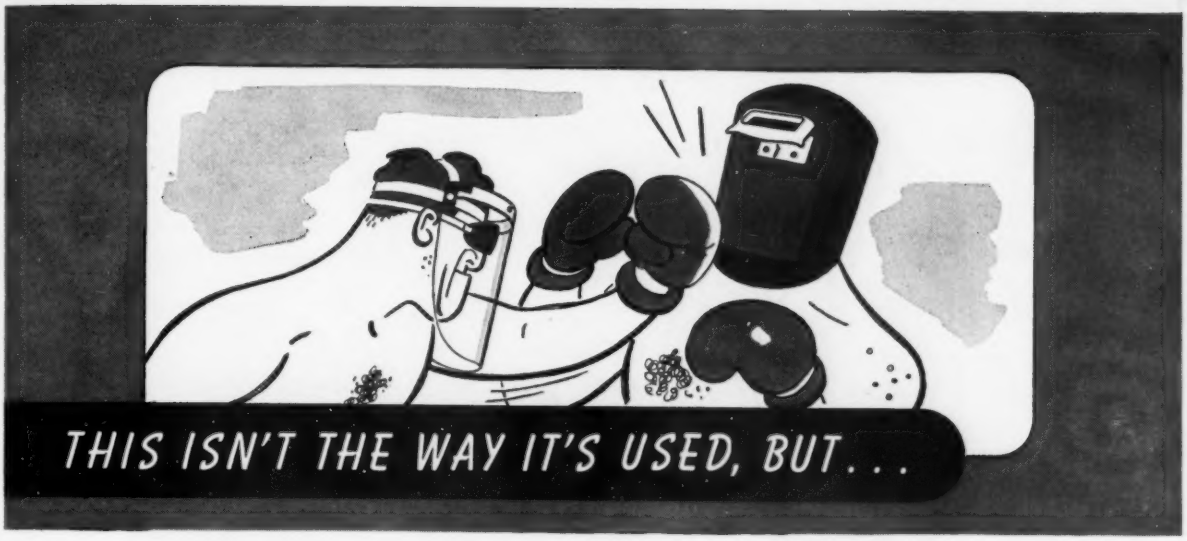
I think your magazine is one of the finest in the field, and I sincerely appreciate its value.—Frank P. Kelly, Safety Inspector, The Murray Corporation of America, Scranton, Pa.

We are forwarding your request for the Data Guide to Randolph Laboratories. It's an excellent work, and we are sure you will enjoy looking it over. Thanks for your compliment concerning OH — we'll do our best to live up to it.—Ed.

"Fire Protection for Industry"

OCCUPATIONAL HAZARDS:

I have been receiving OCCUPATIONAL HAZARDS for the past year and have enjoyed reading the contributed articles relative to safety in different types of industry, as well as your regular features. My congratulations to you on the new presentation of your fine magazine. The new size, as well as the fine quality of paper on which it is printed, are a decided improvement, as far as readability and appearance are concerned. The series of articles on "Fire Protection for Industry" contain a wealth of information for those interested in fire hazards, modern fire extinguishing agents and methods of fire fighting. Your graphic depiction of fatal accidents in the special article "And Sudde Injury" should be utilized by all safety engineers, and others interested in safety work, in publicizing the results of thoughtlessness, carelessness and indifference.—Charles A. Loranger, Safety Engineer, Corps of Engineers, Sacramento, California.



CESCO EQUIPMENT CAN TAKE IT!

• CESCO safety equipment can take a lot of punishment and come out with remarkable service records. This durability is based primarily on the use of quality materials in CESCO products and the application of quality workmanship in the making of them.

• CESCO equipment is outstanding in durability, safety and comfort—as represented by: **(A) No. 354 Spectacle Goggle, (B) No. 527 Chippers Cup Goggle, (C) No. 749 Face Shield, (D) No. 94 Respirator, (E) Acitex Hood, and (F) No. 401-2 Welding Helmet.** Write today—it will pay you to get full information and prices.

A-112

CESCO PRODUCTS
SOLD BY

CHICAGO EYE SHIELD COMPANY

2308 Warren Boulevard • Chicago 12, Illinois

CESCO

CESCO FOR SAFETY

eliminate grinding dust hazards with

AEROTEC INTEGRAL DUST COLLECTORS

PROBLEM: Industrial dust, as a result of operations on grinding, buffing and polishing machinery, has produced not only a nuisance, but in many cases attained proportions so acute that it has actually created a health hazard for all exposed to such dust laden air.

ANSWER: The AEROTEC collector is unique in that it meets every requirement imposed by this severe service. Consider these outstanding advantages:

1. High collecting efficiency over a wide range of flow rates. • 2. Constant pressure drop • 3. No fire hazard • 4. Long Life • 5. Self Cleaning • 6. Easy maintenance

Developed during the war at the request of the Armed Services, the Aerotec principle of collection met such severe requirements as the cleaning of intake air for aircraft engines.

This unit has no cloth bags to plug and ignite; no dirty oil-soaked filters to replace, no moving parts to fail. Activated by a small motor mounted on top of the unit, the dust-laden air first whirls through a primary chamber, spinning out the larger particles, then at high speed through a bank of small diameter Aerotec tubes which precipitate the remaining dust into a bin or hopper. The cleaned air is discharged back into the room, or through an outlet duct to atmosphere.

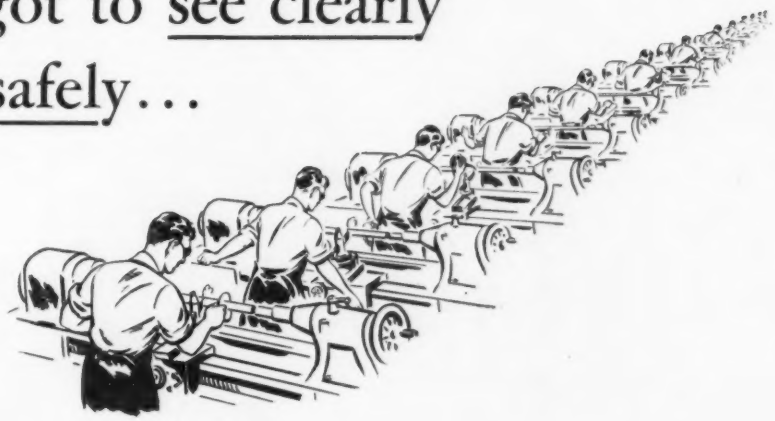
Because there are no bags, screens or filters to clog with dirt and interrupt the flow of air, the Aerotec collector maintains its high efficiency at all times, and the suction at the hood remains constant.

EASY MAINTENANCE. To empty the hopper, simply open the door, pull out the large dust bin, empty, and replace. The receptacle has a large capacity, and even with steady operation, it should not be necessary to empty it oftener than once a week. The primary and secondary chambers need no attention as they are self-cleaning. Consult your local or State Health Department for installation requirements in your location. For further information write for catalogue 310.

THE THERMIX CORPORATION
PROJECT AND SALES ENGINEERS
FIRST NATIONAL BANK BUILDING • GREENWICH, CONNECTICUT

THE AEROTEC CORPORATION
GREENWICH, CONNECTICUT

They've got to see clearly to work safely...



● A complete eye safety program must include *protection* and *correction.* Protection from flying particles, dust, and fumes, of course. But industrial studies show that at least half of all workers need eyesight correction. No worker who cannot see clearly can work safely (or efficiently). Industrial eyewear, incorporating correction professionally prescribed to the requirements of every job, will improve your safety record —and increase productivity. Your Bausch & Lomb distributor offers prescription service on industrial eyewear—*protection* and *correction* for your workers.

SAFETY FACT-FINDING CASE HISTORY...

ABOVE Ortho-Rater Visual Standards

BELOW Ortho-Rater Visual Standards

ACCIDENT-PRONE WORKERS *are identified by the Bausch & Lomb Industrial Vision Service with the Ortho-Rater fact-finding system. From medical records in one plant, 42 workers with high accident-frequency records were selected for study. Of the 42 workers, only 11 met Ortho-Rater visual performance standards; 31 failed to meet the standards; a basis was set for selecting accident-free workers for hazardous jobs. The B&L Industrial Vision Service also contributes to increased production, improved quality, reduced labor turnover, and lower training costs.*

Write for descriptive bulletin A-591.

BAUSCH & LOMB

OPTICAL COMPANY ROCHESTER 2, N.Y.

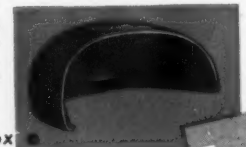
Executive

You've never seen a safety shoe that looks like this!

Safety shoe in the plant!
Street shoe after hours!

TWO SHOES IN ONE!

Here's the "extra" pair of shoes for safety on the job your men *will* buy! Order a pair today—return for full credit if they do not meet your requirements. Or send for a Lehigh representative.



Yes...with the same Lockrim® steel toe box found in every pair of Lehigh safety shoes. High carbon, cold rolled, Austempered steel. Patented Lockrim® can't cut into sole under heavy impact. Locks toe box in place for life of shoe.

LEHIGH
SAFETY SHOE COMPANY
ALLENTOWN, PA.
Division of the ENDICOTT JOHNSON CORPORATION
WESTERN OFFICE: 12th AND SPRUCE ST. LOUIS 2, MO.

®REG. U. S. PAT. OFF.

The sensitivity of the carbon monoxide indicator permits detection of the gas in industrial plants long before it reaches an amount to be harmful to working personnel. A practical use of the indicator is demonstrated in testing for carbon monoxide gas in the vicinity of a glass-molding gas furnace.

NBS COLORIMETRIC Carbon Monoxide Indicator

By MARTIN SHEPHERD
National Bureau of Standards

Carbon monoxide (CO) is the number one acute poison killer, both in industrial and in non-occupational life, following close upon automobile accidents as a major cause of death. It is probably the oldest known poison in existence, dating back to the time when cave men passed out after inhaling smoke from poorly burning fires.

Existing methods of determining carbon monoxide have two decided disadvantages:—

(1) The simple and inexpensive, easily available methods are not sufficiently sensitive, and

(2) Those that are sufficiently sensitive are too expensive for field use.

OCCUPATIONAL HAZARDS now brings to its readers the story of the latest device developed during the war which makes it possible for anyone to find carbon monoxide in an easy, inexpensive way.

A COLORIMETRIC indicating gel that will detect and estimate less than 1 part of carbon monoxide in 500 milion parts of air, a sensitivity more than 100 times greater than that attained by former chemical indicators, was developed by the Gas Chemistry Laboratory of the National Bureau of Standards for war time uses of the armed services. This gel will also detect 0.001 percent by volume in less than 1 minute, and determine physiologically significant amounts (0.01 to 0.4 percent) in approximately 1 minute at ground level. The indicator is so sensitive that it is possible to diagnose carbon monoxide poisoning by analyzing exhaled air instead of taking a blood sample for analysis. Designed to meet the demand for a simple and sensitive means for determining very small amounts of carbon monoxide in military equipment and installations, it offers promise for many peaeetime applications.

Early in the war it was evident that the determination of physiologically significant amounts of carbon monoxide in aircraft, particularly at high altitudes, would assume increasing importance. This was true as well with such equipment as flame throwers, tanks, gun pits and turrets, PT boats, landing craft, and aircraft carriers.

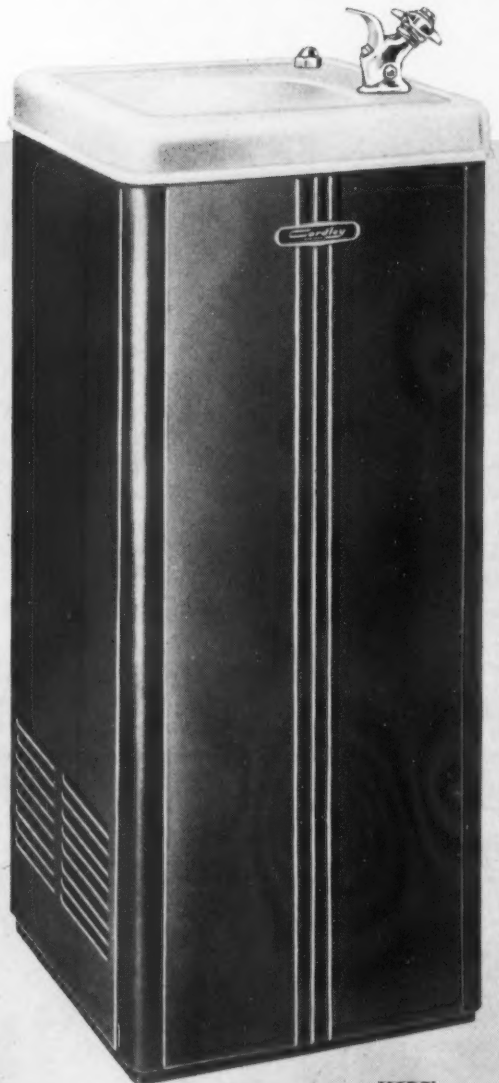
Existing methods of determining carbon monoxide possess two decided disadvantages. First, the simple and inexpensive, easily available methods were not sufficiently sensitive. Second, those which were sufficiently sensitive were too ex-

(Continued to Page 23)

The NBS Colorimetric Carbon Monoxide Indicator offers a rapid, convenient, and sensitive method of detecting the presence of this dangerous gas. Here, a test is being made for carbon monoxide in the engine laboratory at the National Bureau of Standards.

Cordley® Hermetic

electric water cooler



MODEL
HCS-10

With Completely Sealed Refrigeration System

- LUBRICATED FOR LIFE
- PRECOOLER BOOSTS CAPACITY, SAVES CURRENT
- USES LESS THAN 25 WATTS PER GALLON COOLED
- EVERDUR WATER STORAGE TANK
- SEAMLESS COPPER TUBING
- DIAL TEMPERATURE CONTROL
- HANDSOME FINISH: SATINY NEUTRAL GRAY
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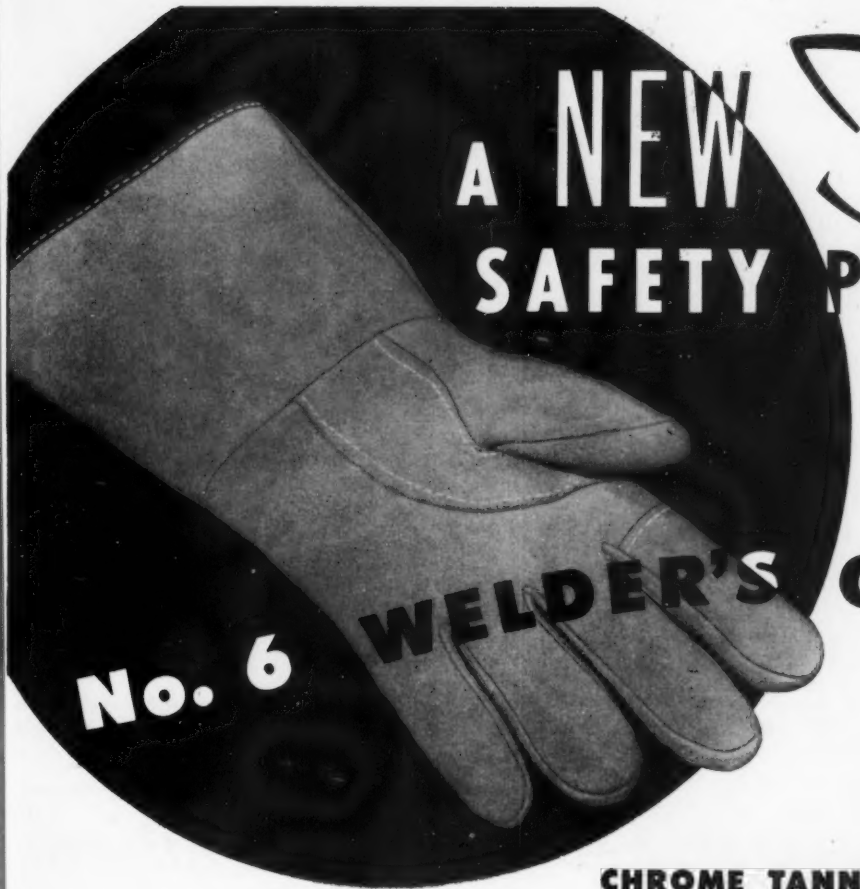

A NEW Kimball SAFETY PRODUCT

No. 6 WELDER'S GLOVE

CHROME TANNED LEATHER
ONE PIECE LINED BACK

Here is a glove made especially for operators of welding equipment, affording real comfort. Back is fully lined to insulate against heat. There is no exposed stitching on the back to let heat and sparks "leak" through. Ample reinforcement on palm and finger insures long wear. All Kimball Safety Clothing is manufactured from the finest materials and carries an absolute guarantee of satisfaction.

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EYE PROTECTION:
Spectacle Goggles, Welding Goggles, Composition Goggles, Sideshields.

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MITTENS; Welder's, Asbestos, Steel Stitched.

BODY PROTECTION:
CLOTHING; Wool, Flameproofed Cotton.
LEGGINS and SPATS; Leather, Asbestos, Flameproofed Cotton.

APRONS:
Leather, Asbestos, Flameproofed Cotton.

Kimball

SAFETY PRODUCTS COMPANY
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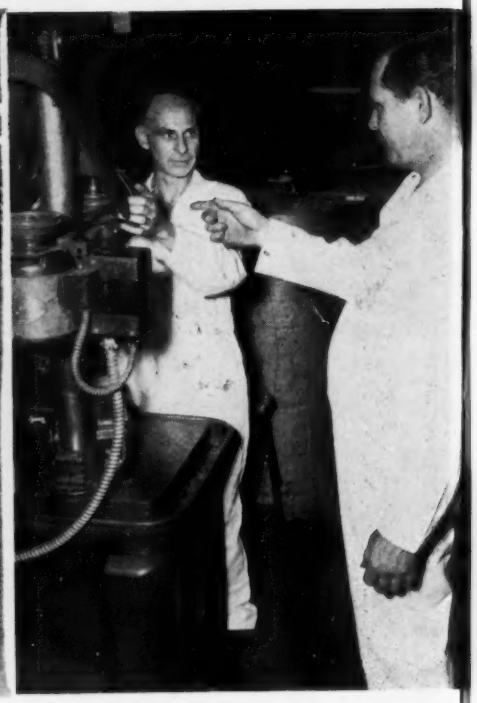
One view of the Phantom assembly line at the McDonnell Aircraft Corporation. "Mass production" techniques of this type are relatively rare in the plant.



A drill press operator is cautioned by a member of the safety committee as the operator prepares to use the machine with the belt guard open.

Safety — A Personal Proposition

By W. T. BOWCOTT
Assistant Public Relations Director
McDonnell Aircraft Corporation

The Safety Committee at McDonnell Aircraft Corporation keep down lost time accidents by considering . . .

- **PIONEERING**
- **SAFETY PLAN**
- **PERSONAL ELEMENT**
- **REGULAR MEETINGS**
- **HANDICAPPED EMPLOYEES**
- **STATISTICAL PROOF**

ACCIDENTS will happen, according to the trite and true saying—but it was no accident that the National Safety Council dropped its Aircraft Manufacturing Safety plaque this year into the lap of the McDonnell Aircraft Corporation of St. Louis, Mo. Rather, it was a direct result of the concerted action of a Safety Committee that really gets down to earth to keep that lost time figure low.

McDonnell was far ahead of the field of Group B aircraft plants—those with less than 5,000 employees. Over six million man hours were worked during the past year with the astonishingly low total of only 24 hours lost due to accidents. Over 4½ million of these hours were worked before the first accident occurred in April, 1947.

Pioneering

Even more unusual from a safety standpoint is the fact that McDonnell is not solely a manufacturing plant. It is an aircraft pioneer, developing such "Buck Rogers" products as the famed Phantom, first all-jet Navy fighter plane: the Banshee, king-sized brother of the Phantom; the XHJD-1, world's largest and first twin-engine helicopter; and radio-guided and controlled missiles.

This experimental work for the Army and Navy requires constant retooling, revision of production techniques and employment of intricate machining processes, all of which spell increased hazard for the worker. A guard devised and installed one week will be outmoded the next as production methods change. An unusually large amount of hand work with tolerances down to one-thousandth of an inch is a direct invitation to a soaring injury rate.

Safety Plan

McDonnell was quick to recognize the safety problem and take measures to combat it. Shortly after the company's founding in 1939, Mr. A. C. Grosse was appointed Safety Engineer to formulate a workable safety plan.

First measures adopted by the department were the usual methods of publicizing a campaign. Workers were reached through the media of posters, bulletin boards, employee handbooks, the company house

organ and by personal contact. Simplified methods for providing and distributing free goggles, face shields, respirators, asbestos gloves and other protective devices were developed.

As the company began its rapid growth from a few hundred employees to the industrial giant of today, Mr. Grosse began to place ever-increasing value in one factor —the personal factor. Safety promotion, he saw, was fundamentally a sales problem so he began to "sell" himself, his ideas and his ideals just exactly the way a sales manager would promote a new product—by personal contact.

The circulation of one man among over 3,000 employees is necessarily limited so Mr. Grosse began to breathe new life into the already existing Safety Committee. This volunteer eighteen man body now effectively covers every department of the plant—from tool grinding to final assembly. With an eye toward prevention first and then cure, they ferret out dangerous situations so that they can be nipped before they develop.

Personal Element

And the personal element—the selfish interest we all have in preserving our own skins—becomes of increasing importance as Mr. Grosse continues to expand his program. A worker who glances at a safety poster is impressed slightly; a man who is tapped on the shoulder by a fellow employee and cautioned is thoroughly impressed. Again . . . the personal element.

Heart of the entire program is the Safety Committee. All too often in an industrial plant a committee of this type functions in name only. Not so at McDonnell. Each member first undergoes an extensive training course consisting of safety films, lectures and printed instructions. A written examination is then taken to determine the individual's fitness for the job. The company's insurance representative—the U. S. Fidelity and Guaranty Company—assists in all phases of this training program.

Regular Meetings

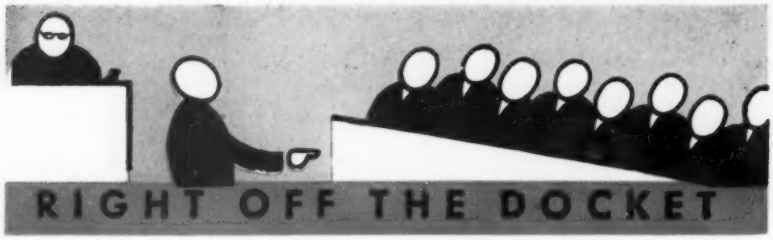
Meetings of the Safety Committee are held once per month, and it is here that the hazard-conscious members bring up and discuss potential dangers before they develop. Mr. Grosse personally checks on every recommendation made to make sure all resolutions are carried out. McDonnell's Safety Engineer also looks into every accident reported in order to assemble valuable data on frequency and severity ratios for various job classifications.

The personal element in safety comes into play almost as soon as a worker passes through the company's employment portals. Each man is channeled directly to Mr. Grosse's ofice where all aspects of the safety and insurance program are run over in detail. This direct contact with the worker has proved

(Continued to Page 30)

Scenes like this are getting more and more infrequent at the McDonnell plant as the eighteen man Safety Committee keeps an eye out for infractions of safety rules. Small jobs such as this provoke the greatest vigilance as employees are reluctant to use necessary equipment for just a few minutes work.

One section of the modern, well-equipped First Aid station shows two of the staff of three nurses at work. All nurses are qualified "RN's" with considerable experience. McDonnell's extensive safety program has reduced visits to First Aid enormously while lost time accidents have been reduced to an almost negligible figure.



The trend of litigation on workmen's health and accident compensation is reflected in these briefs on the latest and most representative cases coming to trial in the intervals between issues. Familiarity with this trend is important to every industrialist. Clip cases and file for future reference.

Question Concerns Compensability of Occupational Disease

CLAIMANT was engaged in melting pinto lite; that in connection with his duties, it was necessary for him to stand over a melting pot which was kept at all times at a very high temperature.

On the 18th day of June, 1945, he became ill and was sent to the first aid station by one of the company's agents and they in turn advised him to see his family's physician. Immediately thereafter, he did consult his family physician and has been continuously, since the above date, under treatment and care by reason of the illness which occurred. The only question presented is whether claimant's disease was compensable under the statute. There is nothing definite alleged in the claim that there was a casual connection beween the employment and the disease nor what parts of claimant's body were affected thereby.

Court concluded that if an employee suffers from a disease, occupational or other, he has no re-course under the act, unless the disease naturally results from an accidental injury. In order for a disease to be referable to an accidental injury, its inception must be assignable to a determinate, single occurance, identified in time and place.

Claimant in the instant case, alleges that for 18 months prior to June 18, 1945, he was employed in a job which required him to melt pinto lite and stand over a melting pot heated to a high temperature. There is no statement that on that date the disease for which he seeks compensation first became apparent to himself and others. There was no evidence advanced that any extraordinary, or unusual happening or event took place to fix the inception of the disease as to time and place, or to relate its inception to an accidental injury. This was held to be indispensable.

Court concluded that the claimant's disease was a gradual result of breathing fumes of the melting pinto lite, and that no compensation can be allowed under the act requiring injury by accident.

Gabbard vs. Proctor and Gamble Defense Corporation, Supreme Ct. of Tenn. May 3, 1947

201 South Western, Second Series, Page 651

(Continued on Page 24)

WATER HEATER CLEANING?

WATER *POISONING?*

Domestic or Industrial Process water can be easily polluted with such poisons as copper chloride, copper sulphate or soluble copper, if improper cleaning materials are used.

When water cooling or heating equipment needs cleaning—Be Safe! Be Sure!

INSIST ON THE **"CLEAN-A-COIL"** SOLVENT PROCESS

(U. S. PATENT NO. 2089317)

NOT CLASSIFIED AS CORROSIVE LIQUID!

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In Canada—**Delta Engineering Ltd., 407 McGill St., Montreal**

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IDEAL FOR THE STOCK ROOM

. . . The Dayton Roll-Along Safety Ladder with its rubber tired swivel casters can be speedily moved in any direction with practically no effort.

Safety shoes with renewable treads hold ladder permanently and safely in place while ladder is occupied.

Constructed of tested airplane spruce throughout and reinforced with steel braces for additional safety. Folds compactly for convenient storing. Available in sizes 3-ft., 4½-ft. and 6-ft.

Elevating auxiliary platform which folds back in main platform adds height if desired. These ladders are being used in many of America's largest plants. See for yourself! Write today for bulletin.

For Safety's Sake . . . **consult our SAFETY DEPARTMENT . . . we have the complete line of safety equipment for your every requirement.**

DAYTON SAFETY LADDER CO.

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For complete information, just check any or all items listed, and send us the coupon.

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.....SAFETY CLOTHES	.....EXCELSIOR CANS	.....GLOVES
.....ROLL-ALONG LADDERS	.....WATCHMEN'S CLOCKS	.....FIRE BUCKETS
.....FIRE HOSE	.....ACID PUMPS	.....ROCK UP RACKS
.....FIRE EXTINGUISHERS	.....RESPIRATORS AND PARTS	.....“PLY”
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LASTING SATISFACTION, SAFETY and ECONOMY

Hillyard's famous trade-marked blue drum with white check bands have carried floor satisfaction for almost half a Century. Hillyards have maintenance products for every surface from the basement floor to the roof top. Hillyard's Floor Treatments, Seals, Finishes and Waxes properly protect and prolong the life and cut the maintenance cost of all types of floors. Hillyard Floor Machines are durable, economical, efficient. When Hillyard Products are used floors stay cleaner, look better, last longer.

There is a Hillyard Floor Treatment Engineer in your locality ready to help you, his advice is FREE, call or wire us today, no obligation.

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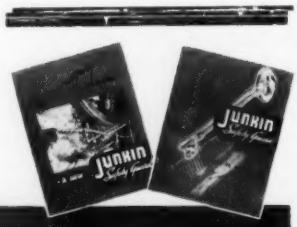
PRODUCTION STANDS OUT WHEN PROTECTION IS BUILT IN!

With Junkin Safety Guards on the job, EVERY MINUTE is devoted to production — because costly, time-consuming accidents are reduced.

You reap the important benefit of improved worker efficiency too, for with this ever present evidence of protection, press operators are able to hit new peaks of efficiency.

Time studies prove that production goes up when Junkin Safety Guards are on the job. Send for bulletin describing the Junkin Safety Guard and Swinging Die Closure. Address:

Junkin Safety Appliance Co., Inc.
935 West Hill St. Louisville, Ky.



JUNKIN SAFETY GUARD

TAKE CLEAR VISION . . .

Anywhere in your Plant

PREVENT ACCIDENTS—SAVE TIME and MONEY
The K-LENS-M Way

Safety goggles and face shields cleaned with K-LENS-M LENS CLEANER will help your employees produce more and better work by eliminating eye strain and fatigue caused by dirty, film covered lenses.

K-LENS-M DISPENSER CABINETS are neat, compact, inexpensive Lens Cleaning Units that are easy to install, operate and service.

You are cordially invited to visit us in Booth No. 58 at the National Safety Congress and Exposition, Stevens Hotel, Chicago, October 6-10.

Write THE WILKINS CO.
CORTLAND, NEW YORK

K-LENS-M
REG. U.S. PAT. OFF.

THE MODERN GOGGLE CLEANING STATION

Remember . . . **K-LENS-M Cleans Better and Leaves No Film**

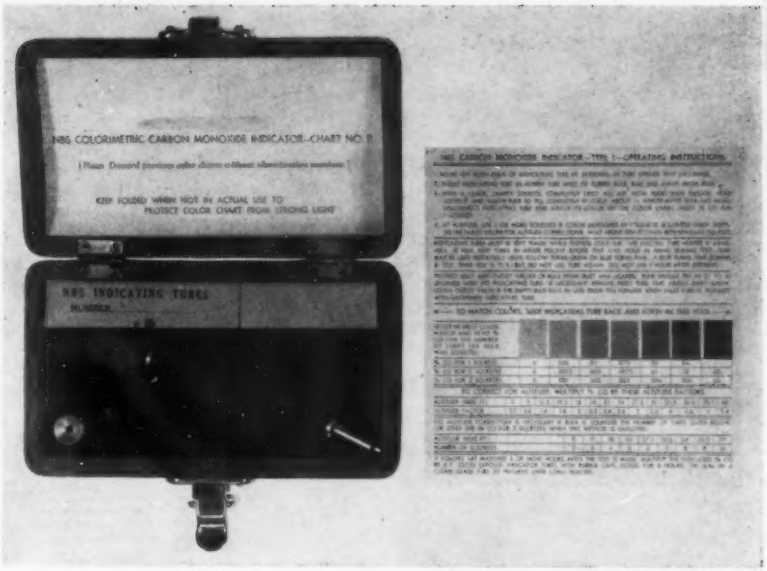
NBS COLORIMETRIC CARBON MONOXIDE INDICATOR

(Continued from Page 15)

pensive for wide field use.

During 1941 the Royal Aircraft Establishment, Farnborough, England, developed an indicator for the detection and estimation of small amounts of carbon monoxide on board aircraft. As this indicator was not entirely satisfactory, the Bureau of Aeronautics, Navy Department, and later the U. S. Army Air Forces requested the National Bureau of Standards to study the RAE gel, with the object of improving it or developing a suitable substitute. Starting with this material, an indicator about four times as sensitive, more adaptable to field conditions, and truly colorimetric, was produced.

The indicating material, yellow in color, is a silica gel impregnated with a complex silico-molybdate compound and catalyzed by means of palladium in the form of the sulfate. The yellow indicator turns various shades of green and bluish green on exposure to very low concentrations of carbon monoxide—a direct parallel to the physiological response to this gas. For use, the indicator gel is sealed in a small glass tube about 5 in. long and the approximate diameter of a lead pencil, with protecting layers of pure silica gel in each end of the tube.


NBS COLORIMETRIC CARBON MONOXIDE INDICATOR—CHART NO. 2
KEEP FOLDED WHEN NOT IN ACTUAL USE TO PROTECT COLOR CHART FROM STRONG LIGHT
NBS INDICATING TUBES
NUMBER

The complete kit comprising the NBS Colorimeter Carbon Monoxide Indicator can be carried in a box which fits the average size coat pocket.

To make a test, the ends of the indicating tube are broken off and the tube inserted in an ordinary 2-oz rubber aspirator bulb equipped with a special rate-controlling valve. The air to be tested is drawn through the tube by squeezing the bulb once and any color that develops is compared with a set of standard color chips. Such a test

Dilution-Proof • *Sanitary* • *Economical Group-Preventive*

1.

User steps on Peda - Spray Dispenser, automatically starts spraying feet at first pressure.

2.

User "marks time," gets complete application.

3.

Economical! 3200 applications per gallon of Peda-Spray Solution.

Peda-Spray for Athlete's Foot

With 20-Year Guarantee Feature

COMPLETELY SELF-CONTAINED: No dilution and no contamination. Requires minimum of attention.

INDIVIDUAL APPLICATION: Each user gets HIS own application of full-strength solution.

NO SPECIAL INSTALLATION: Just keep Peda-Spray Solution in the Dispenser.

PEDA SPRAY CO., INC.

For full particulars and list of Peda-Spray users, WRITE

26 East 42nd Street New York, N. Y.

Representatives throughout the U. S.

can be made by untrained personnel in about 1 minute. For use in aircraft, tables giving correction factors for altitude are provided. Complete equipment for field use can be carried in a box which fits in the pocket of a field jacket.

The NBS Colorimetric Carbon Monoxide Indicators were made only at the National Bureau of Standards and altogether more than a half million were supplied for the military services of the United States, Canada, and Great Britain. Patents have been issued on the device and assigned to the Secretary of Commerce. A license to manufacture the tubes has been granted to two or three American firms, including Mine Safety Appliances Company, Pittsburgh, Pa., and it is expected that commercial production will begin this fall.

Among the prospective peacetime uses are examination of air in and around buses, automobiles, garages, furnaces and furnace rooms, industrial plants, and civilian transport plants, and in the diagnosis of carbon monoxide poisoning. The tubes may also be modified to serve as detectors of other reducing gases and vapors, including many organic vapors.

New CATALOG—NOW READY

Fully Illustrated 24-Page Book Printed in Four Colors

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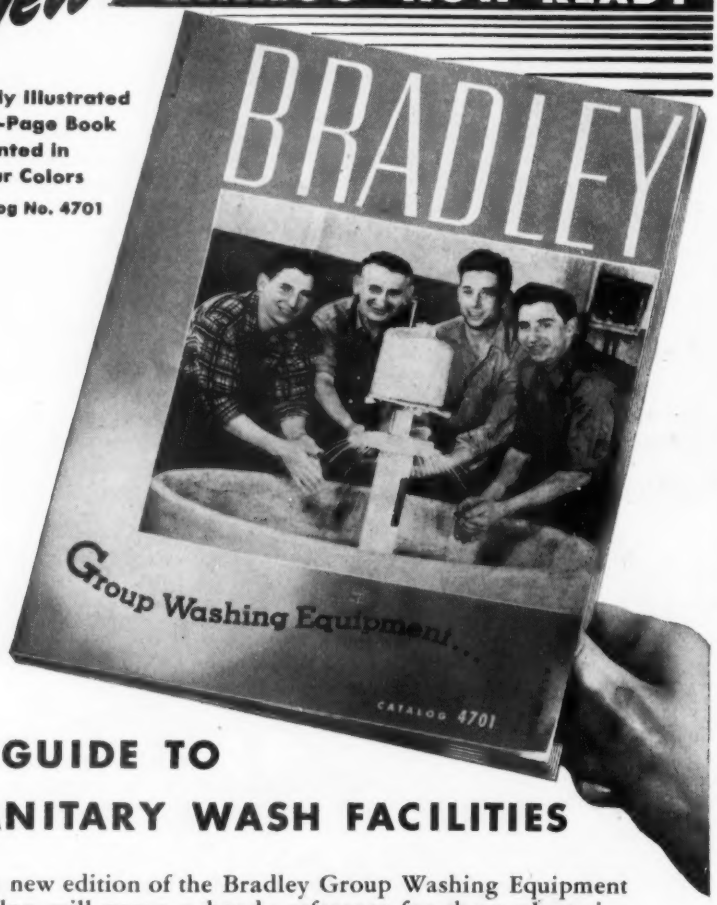


A GUIDE TO SANITARY WASH FACILITIES

This new edition of the Bradley Group Washing Equipment Catalog will prove a handy reference for those plants interested in improved and more adequate washroom facilities.

Industrial organizations using Bradley Washfountains and Multi-Stall Showers have found that these modern, sanitary fixtures safeguard workers' health and operate economically with long-life durability. There are no faucets, and maintenance is reduced.

If you plan to enlarge present washrooms, add new facilities, modernize, or—construct new buildings—this interesting book, Catalog 4701, will be of much interest and help. We are more than glad to forward a copy . . . BRADLEY WASHFOUNTAIN CO., 2259 W. Michigan St., Milwaukee 1, Wis.

BRADLEY washfountains

OFF DOCKET

(Continued from Page 20)

Death Caused by Lightning While Employed

STOREY was employed in the cultivation and care of citrus groves, driving a tractor which drew a spraying machine. While he was so engaged a thunder storm arose and he took shelter under a tarpaulin a short distance away, where he was soon afterward struck by lightning and killed instantly. The tarpaulin was provided by his employer, suspended between two trees which were higher than the surrounding growth which increased the hazard of injury by lightning. Once under the shelter, Storey chanced to sit on a box of tools, thereby subjecting himself to greater danger than others in general. Claim was compensable as being an accident arising out of and in the course of employment.

Fort Pierce Growers Ass'n—vs—Storey
29 So. 2nd, Page 205
Superior Court of Florida
Feb. 11, 1947

Injury From Blood Test

MARY MESSINGER was a waitress, handling food in a local restaurant. She was directed by her employer to secure a health certificate and submitted herself to a physician who drew from her arm some blood for the purpose of making a blood test as required by the statutes. The lesion made by the result of the disability thus created physician became infected, and as a result she was forced to leave her employment.

The record indicates that claimant and other employees were ordered by their employer to have a blood test made. They were not directed to go to any particular physician, but were advised that if they went to a certain doctor the charge for the tests would be two dollars each. Claimant went to a physician of her own choosing for the test.

It is true that the claimant was ordered by her employer to take the blood test, however, this was an obligation under the law, and not a requirement of the employer.

It was determined that disability resulting under the circumstances was not such that resulted by reason of a compensable accident arising out of and in the course of one's employment.

Claim was denied.

Industrial Commission vs. Messinger.
Supreme Ct. of Colo., May 26, 1947
181 Pacific Reporter, 2nd Series, Page 816

Do You Know Your Cold Facts?

by CHLORIS KILLIAN

You probably DON'T wear an iron ring or carry a buckeye in your pocket but you may do other things just as foolish to prevent or cure the COMMON COLD.

Here is a true and false test designed to show how well you are informed on Cold Facts, up-to-the-minute methods for the prevention and cure of colds as approved by the American Medical Association.

1. **Use of a vaporizer or steam-kettle is a most highly recommended preventive treatment and will often stop a cold in its earliest stages when the only symptom is a dry scratchy feeling in nose and throat.**
2. **It's always a good idea to take a laxative and rid the body of poisons when you've caught a bad cold.**
3. **Doubling the required daily amount of Vitamin D will double your natural resistance to colds.**
4. **Gargles, nose-drops, sprays employed to prevent a cold may do more harm than good because they tend to remove protective mucous from the nose and throat.**
5. **Cold vaccines are helpful to some people but have not proved effective in enough instances to be unreservedly recommended as a way of building immunity to colds.**
6. **Colds may be prevented by keeping the system alkalized with baking soda.**
7. **Rest in bed is still the first commandment in treating a cold.**
8. **Regulation of the humidity in a house when the furnace is turned on that first cold day in the fall provides highly effective insurance against the first cold of the season.**
9. **Aspirin, quinine, acetanilid and similar fever-reducing drugs have no effect on the infection and are used only to make the patient feel better.**
10. **A liquid diet is recommended for the treatment of the common cold.**
11. **Sixty percent of people have two or three colds a year, seventeen percent have no colds at all or only one a year, twenty-three percent are extremely susceptible to colds and have four or more every year.**
12. **Hot baths are beneficial in the treatment of a cold if the patient is very careful not to become chilled afterwards.**
13. **Changes occur in the nasal membranes of women at the menstrual period that cause them to be more susceptible to colds for the time.**
14. **Coughing, if it is not exhausting, serves a useful purposes and should not be checked with cough medicines.**
15. **The highly recommended Influenza vaccine will also give you immunity to the common cold.**

(ANSWERS ON PAGE 50)

STATIC

$2780 LOSS to a plate glass company when a static spark ignited lacquer thinner.*

$21,500 DAMAGE in a cotton mill when a static spark set fire to a mixture of naphtha vapor and air as treated cotton duck passed through a dryer.*

2 KILLED, 30 injured, $140,000 destruction because Hydrogen leaking from an air cylinder produced a static spark that exploded the gas.*

*Insurance company reports.

Static is a trouble maker during the winter heating season when the air is dry. When static potentials build up, the danger of a spark discharge represents a terrific fire and explosion hazard when volatiles, gases or dust are present. Static plays hob in other ways, too—makes many materials difficult to handle, reduces machine speeds, generally retards production.

There is a simple, economical answer to this problem: *add moisture to the air* with Armstrong Steam Humidifiers. An invisible film of moisture conducts static charges harmlessly to the ground. Armstrong Steam Humidifiers give you the humidity you want where you want it. Installed like unit heaters, they are simple, automatic, inexpensive to operate, quiet and dependable.

SEND FOR NEW BULLETIN No. 177—discusses humidification, contains useful charts and tables, explains operation of Armstrong Humidifiers and how to select them. Yours for the asking.

ARMSTRONG MACHINE WORKS

900 Maple Street, Three Rivers, Mich.

ARMSTRONG *Steam* HUMIDIFIERS

Easy to Install and Maintain . . . Automatic . . . Economical

Workers Have Maximum Safety Plus Comfort

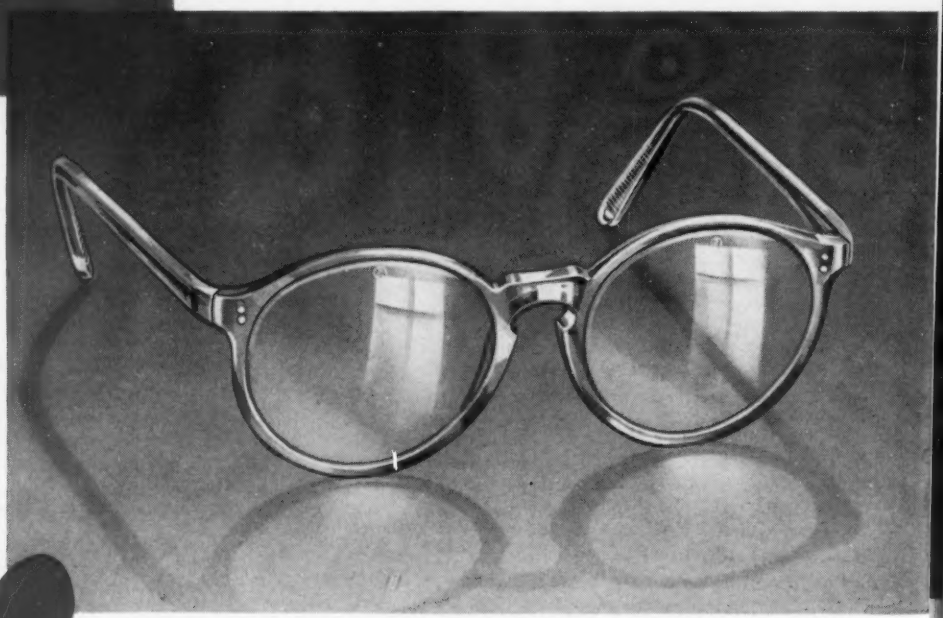
(and they know it)

in AO PROTECTIVE EQUIPMENT

Whether it's clothing, safety goggles, lenses, helmets, face shields or respirators — the AO brand name on a product is your assurance and your *worker's* assurance of four all-important advantages!

- Maximum Protection
- "Designed-in" Comfort
- Attractive Appearance
- Benefits of Latest Developments

Ask your AO Safety Representative for information and assistance in combating the industrial hazards that are encountered in *your* operations.



SAFETY GOGGLES FOR EVERY NEED — Added to the AO line is the new 9200 Series Safety Goggle with lightweight new bridge and other outstanding features designed for positive safety, comfort and appearance. AO eye protection equipment includes goggles for chemical work and welding — spectacle and cup types — lenses that protect against particles, rays, glare and dust — metal and acetate frames — specific products for specific job protection.

RESPIRATORS FOR EVERY NEED — New in the respirator line is the R-2000 which combines unobstructed vision with protection against a *combination* of all dusts — toxic, nuisance and pneumoconiosis-producing. AO makes a complete line of respirators for protection against specific dusts, vapors and gases. This respirator is available with or without a face shield.

SAFETY CLOTHING FOR EVERY NEED — In leather, asbestos and other materials, AO Safety Clothing protects workers from head to foot in foundries, steel mills and elsewhere from flame, heat, and rough stock. Steel stapling where required and other features provide extreme serviceability. Gloves, mittens, spats, leggings, aprons, jackets, coats, and pants all feature *functional* design. Result: increased production via greater worker comfort.

Safety Division

American Optical COMPANY

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL INDUSTRIAL CITIES

. . . And Sudden Injury

This man was overcome by distillate fumes while cleaning out a 1000 gallon oil tank. His fellow worker lost his life. Neither of these men were wearing respirators of any kind. In such operations, workmen should be supplied with supplied-air respirators, rescue harnesses and an assistant to watch constantly from the outside.

← And Sudden Injury

THE sky looked like a large blue circle from the bottom of the 1000 gallon oil tank John was helping to clean. An airplane leisurely flew into the circle and lazily made its way across the opening.

"There's a lucky guy," John said to Ray, his partner. Both watched the plane until it flew out of the circle. Both of them were thinking the same thing as they turned back to work. It would be swell, they thought, to be flying through a lot of clean, cool air instead of scraping down a lot of sloppy oil from the sides of this smelly tank.

Six inches of oil sludge on the tank floor made things pretty slippery, so when Ray fell to the floor, John didn't think much about it. He was concentrating too hard on the task of keeping his eyes open. They were stinging and though sweat was running down his forehead, the pain seemed to be more than that caused by perspiration. It was hard for him to swallow; hard for him to breathe. Everything suddenly seemed to go into slow motion. He felt something was haywire, then knew that Ray hadn't gotten up from the floor yet. He struggled to the side of his buddy and heard him gasping for air. Bending over Ray, John was seized by violent nausea and he slid to the floor to vomit into the oil.

Through the pain that was gripping his body a warning bell seemed to ring persistently in his head. John couldn't do a thing about it. He couldn't get up and he couldn't holler. Knowing that he and Ray were in some sort of terrible danger only made him sicker and his body knotted against the pain which was racking through it. He rolled over on his back and once again saw the blue circle over his head. Something moved at the edge of it and he first thought it was the airplane. It was really a man's head and noises were coming from the mouth. John badly wanted to answer—to beg for help—but he was much too busy gulping in mouthfulls of fume contaminated air down there at the bottom of the tank.

Firemen eventually went in after John and Ray. Ray was dead when they brought him to the hospital but John was still kicking. In fact it took four men to hold him in the stretcher as he writhed in the agony which came from the distillate fumes in his body. They were fumes which would never have bothered him—if he had been wearing a supplied-air respirator while doing his work.

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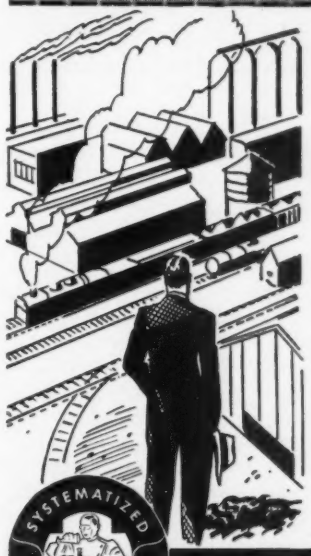

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MEN AND MATTERS

News • Activities • Plans

NEW SILICOSIS BILL . . . Signing of the Gugino bill by Governor Dewey makes fully compensable claims growing out of total disability or death resulting from silicosis and other dust diseases.

"This bill," the Governor said, according to The New York Times, "is one of the most important measures for the benefit of particular groups of workers that it has been my privilege to approve.

"Silicosis, the disease which rises from the inhalation of foreign substances, has been one of the most dreaded scourges of workers in certain industries. Because of difficulties in diagnosis and in correlating disabilities with the progress of the disease itself, its handling in the field of workmen's compensation has escaped satisfactory solution for many years. This bill marks a most important advance in achieving a solution of the problem.

"Significantly, the bill was drafted only after conference with all interested parties and with the approval of all the conferees. The bill represents for the Workmen's Compensation Administration in this State a high mark of achievement in group cooperation."

The Governor made public a memorandum from Mary H. Donlon, chairman of the Workmen's Compensation Board, stating that the bill offered for the first time a workable formula.

PYRENE USES COLOR . . . Color is being used to save precious seconds when a fire starts. The Pyrene Manufacturing Company, 560 Belmont Avenue, Newark 8, New Jersey, has adopted a color scheme to distinguish different types of fire extinguishers. These colors have been selected to provide strong contrast for instant, positive identification. They are:

BRIGHT BLUE: Soda-Acid and cartridge-operated Water-Type. For Class A fires (wood, paper, textiles and other ordinary combustibles) in locations not subject to freezing.

BRIGHT RED: Foam—all types of foam extinguishers and foam-making equipment. For Class A and Class B (gasoline, oils, lacquers and other flammable liquids) fires.

DARK GREEN: Pump Tanks and cartridge-operated Anti-Freeze extinguishers. For Class A fires in locations subject to freezing.

REDDISH BROWN: Vaporizing Liquid. For Class B, Class C (electrical equipment and wiring, calling for a non-conducting extinguishing agent) and small Class A fires.

All nameplates, ringcaps, and handles are painted with identifying colors; shipping cartons and recharge packages in new checkerboard containers also incorporate color identity.

Pyrene is following the example used more and more by industry to use color to convey quick messages to workers. In the past, there have been cases of fire being spread by an excited workman using the wrong extinguisher. This new method of identification minimizes such chances of error. It is hoped that this color-identification scheme will become standard for all extinguishers. Such a simple expedient can save lives and property.

SAFETY INSTRUCTION CARDS . . . Many Oregon employers are making monthly employee distribution of Safety Instruction cards as prepared by the Accident Prevention Division of the Oregon State Industrial Accident Commission. Charles F. Bollinger of the State Commission reports that a different card is printed each month and mailed to the employer who effects distribution to all of his employees through his foremen. Industrial safety training schools, first aid classes, safety committees, plant publications, group meetings, and posters all play important parts in the safety programs of industrial plants. These cards, however, are prepared to bolster safety in the minds of employees without expense to the employer.

SAFETY—A PERSONAL PROPOSITION

(Continued from Page 19)

much more satisfactory than the results obtained by merely handing a man a set of printed instructions.

Handicapped Employees

McDonnell has developed a very satisfactory method of handling employees with physical handicaps—veterans and others who suffer physical impediments that might make them more accident prone than others. The exact nature of the disability is listed on three forms which are filed by badge number with each foreman, First Aid and the Hospital. In the event a man is rendered unconscious it is merely necessary to read his badge number, check the nature of his disability and save valuable minutes in instituting remedial measures.

Aside from the personalized functioning of the Safety Committee which forms the heart of the McDonnell program, the company has done everything possible to provide for worker comfort. Mr. Grosse's philosphy is that there is no such thing as an "accidental" mishap. Every accident has a cause—direct or indirect—which may be found in actual working coditions, home life, financial troubles or a host of other factors which take an employee's mind from his work for that split second when an accident occurs. Wide plant aisles, excellent lighting, good ventilation, rest periods, an excellent first aid station and an extensive recreation program all have their impact on the final result. These factors are, of course, combined with as much personalized information about each employee as possible.

Statistical Proof

Proof of the effectiveness of the McDonnell safety program is in statistics which show that minor accidents have been reduced from 100-110 a month five years ago to only 5-15 at present. The answer lies directly in the creed which Mr. Grosse has developed from long experience in the field . . . "a good safety engineer must have sound judgment, be keenly observant, honest, sincere and a good organizer . . . but, above all, he must have the ability to get along with people."

People . . . the open sesame to any safety problem.

BOTTOMS THAT ARE TOPS IN SAFETY

Booth No. 124

TRADE GRO CORD MARK

National SAFETY CONGRESS AND EXPOSITION

HOTEL STEVENS—OCT. 6 to 10

A MARK OF QUALITY FOR ANY SAFETY SHOE

LET'S TALK AB

The three most vulnerable parts of the human b a survey made of State Labor Department and missions are the fingers, the eyes and the toes consisting mostly of TOE INJURIES, constitute a of all industrial accidents. Typical compensatio injuries taken from a seven-state survey were $11

A RECENT report of the Illinois State Department of Labor indicated that the average indemnity for foot and toe injuries, which happened to constitute 10% of all industrial accidents in that State, was $129. It is well known that this indemnity is only a part of the actual cost to the worker and to his plant. Surveys reveal that the average compensation in industrial accidents represent a bare one-fifth of the actual cost to the employer. A part of this is due to production lost through lost time of the injured worker. This lost time averages 14 days per injury!

Obviously foot and toe safety is a problem that directly concerns management, the safety director and the worker. Toes cannot be replaced—BUT THEY CAN BE PROTECTED!

Almost every foot hazard encountered in industry can be guarded against by the use of safety shoes if the proper shoe is selected for the individual job. Safety shoes are made of specific materials to fit specific hazards. Safety shoes, constructed according to sound manufacturing principles and proved standards, are available in all sizes and widths to fit normal feet comfortably. In the light of modern developments in today's manufacturing of safety shoes there is no excuse for workers not wearing safety shoes nor excuse for management permitting employees to go without them if they are obviously exposed to hazards which can cause disabling injuries to those employees.

Past and Present

While it is always possible to make improvements on anything made by human hands, today's safety shoes are as nearly perfect as modern methods can make them. They are a far cry from the safety shoes of ten and twenty years ago. Their appearance rivals the appearance of the smartest street shoe; they are frequently just as light in weight; they are equally as comfortable to wear, and their workmanship is, in most cases, even better than the workmanship that goes into the average street shoe.

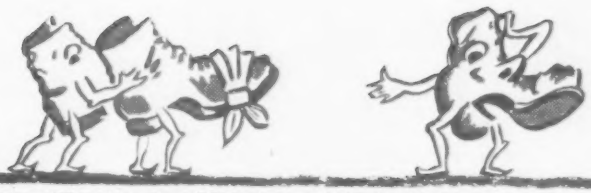
The first safety shoes were made with a box toe of fiber. In order that box be heavy enough to render any worthwhile protection, it had to be very bulky. This made safety shoes unsightly, clumsy and uncomfortable to wear. They chafed and pinched the toes for want of sufficient space within the toe box. It was these first crude products that caused an unfavorable memory to linger in the minds of many factory workers. It is because of this that the most important job of the safety director when it comes to setting up a safety program is to sell workers on the fact that modern safety shoes are pleasing to the eye, are comfortable to wear, and are many times more effective in a foot accident than the old style safety shoe.

Seeing is Believing

Foot safety is a problem which demands continuous attention—continuous promotion. It is a program, however, that pays off in a direct reduction of frequency and severity rates in the aggressive industrial plant. The effectiveness of safety shoes is beyond dispute. There are too many actual cases on record of men's toes having been saved by the use of them to argue this point. They do the job they are designed to do.

The problem of the safety director is to devise some system so that all the employees under him have under him have the opportunity to put their feet into a pair of safety shoes. It is a tough problem and one which requires that the safety engineer get the cooperation of both management and the worker.

Once the worker puts on a pair of safety shoes, examines them and walks around in them, the common



ABOUT *Safety Shoes!*

f the human body according to partment and Industrial Com- s and the toes. Foot injuries, ES, constitute a large percentage cal compensation costs for toe survey was $116 per case!

objections "Too heavy, too clumsy, too ugly" will go out the nearest window.

Getting Cooperation

Methods for securing the cooperation of management, department heads and the workers are as different in details as the plants in which they originate. The editors of Occupational Hazards have come across a very unusual and effective method of securing this much sought after cooperation and we will deal with it as a separate, though integral portion of this article next month. Now however, we will mention a general plan which has been used successfully in a nationally known organization and which suggests a general pattern that can be adjusted to other plants, large or small.

The first step of this plan was a bulletin from the plant manager to all foremen. It announced the setting up of a shoe store, naming location, "equipped to properly fit and supply all styles and sizes of safety shoes," and that "all employees will be allowed to purchase shoes during working hours."

"In order to make this program a complete success, the cooperation of every foreman is required. Through personal contact, each employee must be made to realize the need for wearing safety shoes."

"The superintendent with the foreman should devise a plan by which every worker will have an opportunity to visit the store.

"Admit visitors to the store only on the presentation of a ticket.

"Issue about six tickets at a time. As these workers are returning, six more are being issued, so that the workers are going through in a continuous line until all had then seen the samples of safety shoes and of their actually fitted feet.

Persuasion rather than compulsion was used in this plant. The ticket system aids the clerk in making the sales slip, if the worker decides to

A Plant Shoe Store, if properly managed can do much to promote safety shoes among employees.

The girl on the left has no protection should anything drop on her toes. Safety shoes provide that protection

buy. The workman signs the sales slip which authorizes the firm to make payroll deductions for the shoes.

The committee handling this safety drive secured the cooperation of the plant worker's union. Other unions have been equally cooperative. A bulletin signed by the president of the local, an illustrated, mimeographed sheet, urged all members at this plant to become wearers of safety shoes. It called attention to the company discount in price.

Selection of Safety Shoes

Too much emphasis cannot be placed upon the necessity of selecting the right shoe for the right job. Safety shoes are made of specific materials to fit specific hazards. They are carefully designed and sturdily constructed to meet the requirements of industry.

A complete analysis of plant activities and requirements should, therefore, be made so that the various types of safety shoes may be selected to best meet prevailing conditions.

By far the greatest demand for safety shoes is for protection against impact of falling objects, wheels rolling over feet, the pinching of toes under shifting heavy weights and similar accidents.

Protection Against Falling Objects

The chief means of such protection is the general purpose safety shoe designed to eliminate toe injuries caused by falling objects. A steel box is securely seated in the toe of the shoe to resist violent impacts. Such shoes, in addition to the box toe, are made of rugged material and are soundly constructed throughout. In spite of the tough construction, the modern safety shoe presents a pleasing, smart appearance in contrast to earlier models. The four general safety characteristics of such shoes may be said to be:

1. Metal caps protect toes.
2. Thick sole prevent punctures.
3. Non-skid tread gives surer footing.
4. Straight heels prevent falling.

Protection Against Electrical Hazards

These shoes are completely nonmetallic except for the steel box toe and are therefore non-conductive and spark-proof. They are intended for workmen who are likely to come in contact with electric wires, rails, and the like, and are extensively used in electrified mines, aluminum plants and public utilities. These shoes are intended to protect the wearer from electric shock hazards and should not be worn where body static is a hazard.

Conductive Shoes

These shoes are intended to provide protection to the plant and to the worker in operations where the accumulation of static electricity in the body of the wearer is a hazard. If metal toe boxes are used they are usually rendered resistant to sparking by plating or metalizing with a non-ferrous metal. The sole, heel, and also heel pad or sock lining, are electrically connected. They are usually attached to the insole with conductive cement or its conductive equivalent. The conductive sole harmlessly grounds static electricity which builds up on the bodies of the workers. Any metal used in construction (with the noted exception of the box toe are non ferrous. No metal is used on the eyelets or on the tips of the laces.

(Continued to Page 48)

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TECHNICAL FILE ON METAL POISONING

SAVE THIS VALUABLE REFERENCE MATERIAL: BUILD UP A PERMANENT OFFICE FILE

The action within the lung tissue is negligible and all of the lead dust that reaches the lungs after passing the defense lines is absorbed into the general circulatory system. What happens after that is subject to much controversy. The older theories hold that the lead is transported by the blood as a finely divided colloidal lead phosphate and deposited in the bones. "Once leaded, always leaded," according to the old axiom. Many other theories have been advanced and, unfortunately, lead deposits in adults do not show on X-ray films. Lead is known to have a destructive effect on the red blood cells, causing anemia, but the action of white cells is less definite, the tendency usually being to increase their number.

C131. EFFECT ON NERVOUS SYSTEM. Besides disturbing the blood system, lead poisoning has a definite effect on the nervous system. The first, and usually most pronounced, effect is that action it appears to have on the smooth muscle of the intestine, producing increased tone with loss of motility. The colic of lead poisoning is probably due to the resulting construction of the intestines. Many investigators emphasize the prevalence of gastric ulcers among victims of chronic plumbism. Lesions of the cranial nerves have also been reported, and paralysis of the muscles due to nerve involvement, of which "wrist drop" is a recorded characteristic. It has been claimed that about six weeks after a victim is removed from the lead hazard most of the lead poisoning signs disappear. As far as skin affections are concerned, whenever a lead compound, such as an acetate or an azide, causes irritation of the skin, it is believed the irritation is due to the acid content and not to the lead.

C132. TETRAETHYL LEAD. This substance is an organic metal compound which is dangerously volatile and, therefore, continuously contaminating to any air to which it has access. For that reason it is capable of being absorbed speedily and in toxic amounts through the skin, causing an immediate, rather than a chronic, form of poisoning. The skin can be perfectly normal and healthy, without breaks or cuts, and still permit passage of the substance through the pores. Tetraethyl lead is an oily liquid which even at room temperatures is highly volatile, requiring great care in handling. It is used mainly as an anti-knock for automobile gasoline. The danger lies in inhalation of, or skin contact with, the vapor or the exhaust fumes. Leaded gasoline should be avoided for use in industrial processes, although the hazard is reduced after the lead has been added to the gasoline. Filling station workers, garage workers, car and truck drivers, who use the fuel in a proper manner, are not considered too dangerously exposed to the poison. Tetraethyl lead poisoning occurs most frequently from the undiluted compound.

C133. GENERAL METHOD OF TREATMENT. Most physicians agree that once a worker is found to be suffering from lead intoxication he should be taken immediately from the source of exposure and sent home to rest. Usually the victim is then given doses of calcium chloride or calcium gluconate, a treatment which tends to put the circulatory lead that is causing the trouble into a fixed position of storage. Those workers suffering from chronic lead poisoning, or even those who show an excess amount of lead in their urine but are otherwise lacking lead poisoning symptoms, are usually put on a diet rich in calcium (milk, etc.) and a calcium compound like calcium lactate (60 grams daily) is given them by mouth.

C134. DE-LEADING TREATMENT. After the preliminary treatment, the worker may be found to have a large amount of lead in a fixed position. They are then often subjected to a de-leading treatment which is an attempt to gradually break up this storage so that it can be eliminated through the waste systems of the body. Treatment usually consists of administering drugs, such as potassium iodide, or in reversing the calcium process. All such treatments should be undertaken only by an experienced medical man as a sudden release of the stored lead into the system of the body might easily cause an immediate relapse.

C135. AIR SAMPLING. The concentration of lead in the workroom air is usually determined by taking samples of the air in the room through the use of one of two devices. The type most generally used is the impinger device. This is used to collect lead dust out of the air. The second device, the electrostatic precipitator type, is recommended as most efficient for sampling lead fume content. The collection of air samples with either apparatus requires a great deal of skill and training and it is advised that an outside technician be employed to make these precise samplings in the average industrial plant.

C136. DETECTING METHODS. After the lead samples have been taken, there still remains the job of determining the degree and quantity of lead in the exposure.

TECHNICAL FILE ON METAL POISONING

SAVE THIS VALUABLE REFERENCE MATERIAL: BUILD UP A PERMANENT OFFICE FILE

This is usually done through one of four methods: the colorimetric or dithizone, the spectrographic, the volumetric or Fairhall's chromate, and the dropping of mercury electrode. These methods obviously require a skill and technique far beyond the facilities found in the ordinary plant. Therefore, it is again recommended that qualified testing laboratories be called upon to make the readings.

C137. PREVENTIVE MEASURES. The following preventive rules and equipment suggestions will aid in lead dust control:

1. Hoods with adequate exhaust ventilation should be installed at every point where dust or fumes are found to exist.
2. All mixing and shaking should be done in enclosed machines.
3. All powdered compounds should be transferred by means of adequate vacuum lines.
4. Work tables should be grated on top, ventilated from below, and equipped with small narrow troughs filled with water and attached to each side to prevent dust falling to the floor.
5. All inlets to exhaust ventilating ducts should be below the level of the nose as far as possible to prevent fine dust from being inhaled.
6. A chemical analysis of samples of air from various parts of the plant should be made at different intervals during working hours. Any spot showing more than 1.5 milligrams of lead per 10 cubic meters of air presents a potential health hazard.
7. Employees in hazardous spots should be given respirators approved by the United States Bureau of Mines. Where movements are confined to a small area, forced-draft respirators (fresh air source from the outside) should be used. If exposure is to fumes, masks should be provided with cannisters charged with activated carbon. Respirators are only 70 percent to 90 percent efficient and must be inspected and changed frequently.
8. No dust should be permitted to accumulate on the floor.
9. Floors should be wet at frequent intervals and powdered compounds used where possible. All sweeping should be avoided by the use of large vacuum lines for cleaning. Under conditions of severe dustiness, maintenance men should wear respirators.
10. To prevent the collection of dust on rafters, sils, ledges, etc., ventilating ducts with dust filters should be installed, if possible, near the ceiling or in mid-air.
11. To avoid the contamination of outside air and the territory surrounding the plant, as well as to prevent needless waste, electrostatic precipitators for collecting the dust should be installed in stacks and flues.
12. The personal well-being and hygiene of the workers should be guarded closely. All persons who are to be employed where any lead compounds are used should be subject to pre-employment physical examinations. If the results should show an already abnormal amount of lead in the urine, or kidney trouble, anemia, constipation, veneral disease, alcoholism or addiction to drugs, the prospective employee should not be placed in a lead exposure.

C138. SPECIAL PRECAUTIONS. Medical examinations should be given at least twice a year to workers in lead operations. The examination should include a complete blood and urine analysis. The workers should be thoroughly warned of the hazards incident to their work. They should be trained to use proper safety equipment and to report to the company physician when any upset occurs in their well-being. Personal hygiene is particularly important where workers are exposed to the lead hazard. Showers and locker-rooms should be provided by the plant so that the workers are able to take a shower after each work shift. All exposed parts of the body should be scrubbed thoroughly. Working clothes should be kept clean (many plants provide a work-clothing change twice per work shift) and kept separate from street clothing.

C139. ISOLATED LUNCHROOM. The lunch room should be isolated from the work rooms and employees instructed to wash hands and faces thoroughly before eating. Smoking, eating, or chewing while working should be discouraged in order to prevent lead from entering the body by ingestion. A good wholesome diet should be provided and urged for all workers, with special emphasis on milk. Plenty of sleep and sunshine will do much in keeping the worker fit and free from acidizing infections that stir up the lead content in the body.

C140. INDUSTRIAL MERCURY. Elementary mercury, quicksilver, or hydrargyrum, is a silvery liquid metal which gives off toxic vapors at ordinary temperatures. Its specific gravity is 13.6, melting point minus 38.89 degrees Centigrade, boiling point 356.9 degrees Centigrade. It is insoluble in water, alcohol or ether, but soluble in acids. It vaporizes readily in a heavy vapor whose relative density to air is 6.9. In contact with air it may form an oxide.

C141. MERCURY COMPOUNDS. In combination, mercury forms two compounds: mercurous or mercuric. The former compounds are almost entirely insoluble and, therefore, are not considered as poisonous as the mercuric compounds. Mercury has been found to be a good solvent for gold, silver, copper, zinc and other metals. The solutions formed are called amalgams and are used (gold and silver) in dental fillings and (copper) in electric motor brushes and so on. When combined with nitric acid and alcohol to make a fulminate, mercury becomes an explosion detonator. When combined as a bichloride, mercury is used in medicine, and as a preservative for furs, skins and wood. Mercury is used extensively in thermometers and other scientific instruments.

(TO BE CONTINUED)

INDUSTRIAL *Accidents in the News . . .*

These accidents are taken from the pages of the Nations Newspapers. They've all happened, they didn't have to!

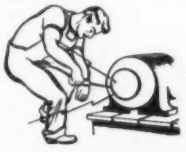
Resumes of these industrial accidents were gleaned from actual newspaper reports. Preventive measures and suggested safe practices are recommended here to help you prevent similar mishaps at your plant. Clip and post on your safety bulletin board.

Cleveland, O., Press

Stanley Leggins, 48, was electrocuted late today while working at the Iron Fireman Manufacturing Co., 3170 W. 106th St. Fellow workmen said he was testing motors when he touched a "hot" wire.

Prevention:

The only persons who should test electric motors are qualified electricians. They know which wires are "hot" and those which are not. They are equipped with proper safety clothing and tools to handle the job safely. It takes just one mistake to put the amateur electrician out of business.



Waterbury, Conn., Republican

George Boinay, 19, injured in an acid explosion at the Chase Metal Works yesterday, was reported in fair condition at the Waterbury Hospital last night. He was burned about the face, eyes, neck and arms while working in the plant laboratory.

Prevention:

There are certain precautions to be taken to avoid acid explosions (see Do You Have the Right Laboratory Protection?, page 20, June, 1947 issue of OCCUPATIONAL HAZARDS) but safety visors, goggles, gloves, aprons and sleeves should always be worn by men who are exposed to acid explosions while working in plant laboratories.

Holland, Mich., Sentinel

Mrs. Clara McKay had her right hand amputated in Municipal Hospital following an accident in which her hand was crushed in a punch press at the Follen Tool Co., in Spring Lake.

Prevention:

Stories like this appear in print every day of the week. Each story points to an unguarded or improperly guarded punch press. There are guards and methods available for every type press which make accidents of this kind impossible. When there is any chance of an operator getting his hand or finger caught in the press, the press is unsafe and should be closed down until an adequate guard is installed.

Kingsport, Tenn., Times

R. N. Cregger, 60, mashed his toes when a piece of iron fell on his right foot while he was working at the Kingsport Foundry and Manufacturing Company. He was taken to the emergency room of the Holston Valley Community Hospital for treatment.

Prevention:

Safety shoes!

Cleveland, O., Press

John Strelecki, 42, was working inside a coffin at the Galanot Products Company in Philadelphia when another coffin fell from an overhead crane to crush him to death.

Prevention:

When moving equipment by overhead crane, the section immediately below the path of the crane should be isolated by the use of a track stop or by flags and ropes. Flagmen also may be used. Care should be taken during the original loading operation to insure that material will not get loose while being moved.

Woonsocket, R.I., Call & Eve Rep.

Edward Lessard, 43, maintenance man at the Masurel Mill on Singleton Street, was critically injured when he fell 20 feet through an opening in the roof of the mill building and landed on his head on the floor of the top story of the structure. Taken to Woonsocket Hospital in a police ambulance, Lessard was found to have suffered a possible fractured skull and internal injuries. His name was placed on the danger list. Police said Lessard had been working with a maintenance crew repairing the roof of the building and fell through a hole made during repairs.

Prevention:

Men on maintenance and repair crews who are working on roofs of buildings should be equipped with a safety harness and rope to prevent them from serious falls, as illustrated in this news article. When working in other parts of the plant they should be supplied with safety clothing similar to that used by those men regularly employed on the equipment to be repaired.

For further information on any of these products, simply list the key number at the head of each item on the special post card enclosed with this issue.

The New Products Section this month is in the nature of a special review of products which have been developed during the last year. It includes all information sent in by manufacturers for inclusion in this special issue of OCCUPATIONAL HAZARDS Magazine.

Goggles and Face Shields

NP 171 — WELDING GOGGLES — Chicago Eye Shield Co. have developed a goggle which is a product of wearers' experience. It can be moved quickly in and out of position, can be worn over glasses if necessary, and can be operated speedily and smoothly with one hand. The new SPEED-SHIFT goggle fits comfortably; the goggle cups are adjustable to individual visual requirements;

headgear is flexible, form-fitting plastic, easliy adjusted to any head size. Will not absorb dirt or moisture and may be cleaned qiuckly with a clean cloth.

NP 172—FLEXIBLE MONOGOGGLE FRAME— A new flexible frame for the MonoGoggle, a single lens goggle, has been announced by Willson Products, Inc., Reading, Pa. The mottled tan frame is non-toxic, will not affect the skin, is resistant to acids, alkalies, oxygenated solvents and retains its flexibility over a wide range of temperatures. A better fit is attained because of its pliability, and the lighter weight is an additional factor assuring comfort for the wearer.

NP 173 — FOG-PROOFING AND CLEANING GOGGLES— The Clearsite Laboratories announce their CLEARSITE No. 200 for fog-proofing and cleaning goggles, gas masks, face shields, etc. It is an impregnated cloth, of long lasting properties, which when applied to surfaces which "steam up" will prevent that condition and enable the wearer to proceed as if he were not wearing protective surfaces before his eyes. The cloth is supplied with a pliable waterproof carrier so that the worker is able to have it with him at all times. Cleaning and fog-proofing glasses is done in less than half the time previously required and the treatment lasts much longer than other methods.

NP 174—WELDING & GRINDING GOGGLES—A new line of safety goggles is being announced by Jackson Products Co., Warren, Michigan. They are made in two types, one type recommended for welding, cutting, and brazing, and one for chipping and grinding.

Welding goggles take 50 mm. lenses, shades No. 3 through 6, protected by cover glasses. Eyecups are of moulded plastic, with ventilating screens and baffle plates on the outside, to prevent fogging and to protect eyes from flying particles and stray light rays. Type W-50 has plastic headrest and telescopic arms with concealed springs. They do not interfere with prescription glasses, may be raised and lowered with one hand in less than a second. Type WR-50 has elastic headband. Grinding goggles are similar but have clear, hardened lenses, no baffle plates. Type G-50 has plastic headrest, type GR-50 has elastic headband.

NP 175—OVER-ALL FACE SHIELD— American Optical Company announces a new face shield designed to

give extra over-all protection, especially on such jobs as babbitting, handling chemicals and on operations in the manufacture of high octane gas. The large window, 18¾" x 10" is made from cellulose acetate .040" thick. It extends completely around the face, even covering the ears. The fibre head guard protects the upper forehead and covers the entire top of the head as an additional safguard against injury. Completely adjustable to various head sizes by means of a metal knob.

NP 176 — ALL-PLASTIC SAFETY GOGGLE— A radically new lightweight all-plastic safety goggle with air-conditioned eyecups that reduce possible fogging of lenses is announced by American Optical Company. The new A-O Panoram goggle

protects eyes against particles striking from any direction on jobs such as chipping, grinding, babbitting, riveting, hand tool and machine operations, rail cutting, spike driving and similar operations. The design of the cup, plus the swivel center, enables the cups to lie back against the face, conforming closely to facial contours. Clear and green lenses are available in this model. Highly resistant to flying particles. Can be worn over most types of prescription glasses.

Safety Gloves

NP 177—WOMEN'S GLOVES— Pioneer Rubber Co. are manufacturing a Pure White Neoprene Glove—Stanzoil's WHITECAPS, for use by women workers in canneries and other food industries. Short fingers fit snugly at the tips and no floppy ends can get caught in moving machinery. Fingers are curved to provide a roomier palm. Gloves are pre-formed in a gripping position. Satinized inside pulls on as easily as a cotton glove, yet having a non-slip exterior finish which holds slippery objects more firmly than

bare hands and add strength in wearing quality to the gloves.

NP 178—CANVAS GLOVE— The Surety Rubber Company have developed a special canvas work glove designed to outwear the ordinary canvas glove three times. The Surety Sureseal Treated Canvas Glove embodies the pliability of the usual canvas glove, but, because of treatment, the glove palm and the stitching is greatly reinforced. It is resistant to wear, snagging and abrasion, and available in knit-wrist and band-top types.

Safety MARKING TOOLS

SAFE—DEPENDABLE—LONG LASTING FOR EVERY NEED

Cunningham steel stamps and steel type holders are made of Mecco "SAFETY" alloy steel, and are preferred for all types of marking—in every industry. A few "SAFETY" marking tools are illustrated, but there are many more available. Write for data and prices on marking tools to suit your needs.

"SAFETY" WEDGE-GRIP STAMPS

- PERFECT BALANCE
- NO MUSHROOMING
- NO SPALLING

"UTILITY" MARKING OUTFIT

(Nine sizes of type marked with one holder)

"SAFETY" BOX TYPE HOLDER

(Marks hot or cold; round, flat or angular surfaces)

HELP PREVENT AN ACCIDENT TODAY! WRITE FOR DATA AND PRICES ON SAFETY MARKING TOOLS

M. E. CUNNINGHAM CO.

SAFETY STEEL STAMPS

Hard Working
PROTECTION

No. 1032

HODGMAN RUGGED RUBBER SURFACE WORK SUIT

No. 1032 Rubber Surface Work Suit is medium weight and waterproof, particularly suited for men who work under wet or muddy conditions. No. 1043 Parka Suit affords warm head to toe protection against foul weather. Ideal for airport personnel, truckmen, railroadmen and others.

No. 1043

HODGMAN INDUSTRIAL APRONS FOR SAFETY AND EFFICIENCY

Hodgman high-quality industrial garments give maximum protection, comfort and service to employees in every field. Fabrics are coated in our own plant to assure complete satisfaction.

No. 7100 is a strong, black industrial apron which resists dilute acids and abrasion.

No. 7110 apron is made especially for acid protection.

Send for catalogue information about these and other Hodgman Industrial Garments.

HODGMAN
Rubber Company
FRAMINGHAM, MASS.

SAFETY SHOES

No. 179—STEEL TOE SAFETY SHOES —The name "SAFTOPEDICS" has been chosen by the Iron Age Div. of H. Childs & Co., Inc. to describe their new line of high quality steel toe safety shoes that is being presented for the first time at the National Safety Congress in Chicago.

The shoe last is scientifically proportioned around the natural mould of the foot to assure a comfortable fit, full support for the arch and a balanced step. Other comfort producing features are a wide steel shank, an inside heel, cork filler between insole and outersole and resilient arch cushion pad.

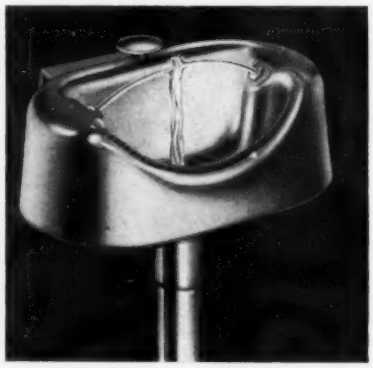
NP 180 — SAFETY FOOTWEAR — Titan Safety Shoe Co. announces three new developments in the safety shoe field. (1) A mocassin type safety shoe with the approved steel safety box toe. (2) Three improved types of rubber safety footwear

manufactured in six inch, ten inch and 15 inch heights in val and blucher patterns with chocolate colored uppers. (3) The new ALIV-PEDIC heel cushion arch and filler. Filler insulates the foot against heat and cold.

NP 181—MOCASSIN STYLE SAFETY SHOES— The High Test Division of International Shoe Co. announces Men's Mocassin Blucher Oxford, which included the dependable protection of their well-known anchor flange steel box toe. Upper leather is of russet elk and sole is of oak leather. This shoe looks exactly like an expensive street shoe of the same style.

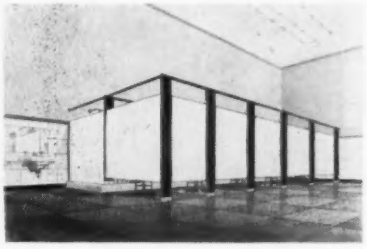
WASHROOM FIXTURES AND EQUIPMENT

NP 182—EYE WASHING FOUNTAIN —Benson & Associates Inc. have developed an eye washing fountain which is readily installed in any plant laboratory or First Aid room. It is ready for instant action at the scene of the accident and is vitally important to first aid eye protection. The washing fountain is operated by



simply placing the face over the bowl. Forehead contacts the valve button, whereby two steady and soft streams of water quickly flow into both eyes, washing out acid, caustic or other substances. This leaves both hands free to open eyelids clamped shut by chemical irritants. The washing fountain bowl is shaped to fit the face and made of cast, corrosion-resistant highly polished aluminum. All other parts are chrome plated or made of stainless steel. Unit comes with 3 ft. copper tubing and adapter for ½ in. pipe connections.

NP 183 — SHOWER CABINET — SHOWER STALL COMPARTMENTS — Sanymetal Products Co. are now manufacturing a new feature cabinet—"STYLITE Shower Cabinet" designed for mass production and industrial use. Side walls and top frame are made of 20 gauge Bondinized steel finished in black enamel inside and out. The inside surface is chemically treated to provide a safe, non-skid mat surface. Entire unit is furnished complete, including soap dish, curtain rod, curtain hooks and white duck curtains. Sanymetal are also manufacturing Shower Stall Compartments built of porcelain on steel. This fabri-



cated material, called "Porcena", is a hard, smooth surface that discourages the common inclination to deface toilet room equipment. The finish scratch resistant. The stall compartments are cleaned with as little effort as it takes to keep the porcelain surfaces of household appliance clean and the glistening appearance also encourages those who use these facilities to cooperate in keeping them clean.

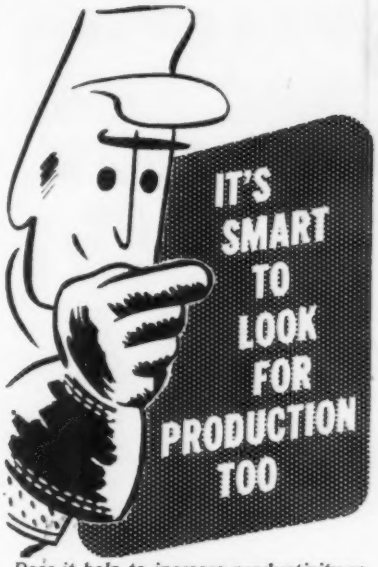
NP 184—ATHLETE'S FOOT— The Gebauer Chemical Company have announced their P.M.C. Spray which should attract a lot of interest as there is nothing like this on the market. Applied by inverting the bottle and depressing lever on automatic "dispenseal" cap, and directing hairlike jet stream to affected parts. The solution is cooling and soothing besides being extremely effective. The "dispenseal" cap hermetically seals solution against contamination and permits convenient and economical use.

NP 185—WASHFOUNTAIN— A new two-person washfountain using a spray-head instead of faucets is being manufactured by the Bradley Washfountain Company. The DUO-WASHFOUNTAIN has foot treadle controls for the spray and a self flushing deep bowl. The bowl is

furnished in either stainless steel or white enamel iron with pedestal panal that encloses the connections and mixer.

NP 186—PEDA SPRAY— On the market today is a development known as Peda Spray being widely accepted in industry for the prevention of the spread of Athlete's Foot. The manufacturer, Peda Spray Co., Inc., attributes its success to the fact that the mere production of an effective preventive is not the final answer in those cases where mass preventive treatment is necessary, as in the case of pools and shower rooms in industrial plants. Peda

Spray is regarded not only as an effective solution, but the solution itself is applied to the foot after the shower through the simple expedient of "marking time" on an alumi-



Does it help to increase productivity so as to widen the gap between cost and selling price? That is the test all factory purchases must undergo today. Certainly it is the standard that should apply to safety apparel. Production as well as protection is the standard to which each and every Steel-Grip Protective Work Handler is designed. Comfort in wearing, freedom in use, the lessening of fatigue . . . these are Steel-Grip Work Handler qualities that *invite* the worker to produce more, faster. Insist on them . . . the result of 36 years' experience which has taken Steel-Grip into every field of industry and taught it *better* ideas that could be gained in no other way. Steel-Grip always means production plus protection. Insist on the genuine. Write for the Steel-Grip catalog today.

Standard Steel-Grip Finger Guard No. 14314—Designed for use on small punch press work, buffing, burring, grinding, inspection, etc. Tough flexible leather with elastic webbing back. Eliminates minor but costly finger injuries. Special quantity discounts.

Asbestos Gloves No. 210—Gauntlet glove. Underwriters' asbestos cloth. Roomy. Good wear and protection for hot jobs. Available lined or unlined.

Heat-Resistant Mitten No. 14730—Made of special tanned leather—jumbo size for utmost in ventilation and coolness. Wool lined. Easy on and easy off.

Chrome Leather Gauntlet No. 655—With palm patch—added protection without loss of flexibility. Wearing surfaces reinforced with steel ribbons. Thumb reinforced with patch and strap. Sewed with steel thread.

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GLOVES COMPANY
Main Factory
776 Garfield Blvd.
DANVILLE, ILLINOIS
STEEL GRIP
Branch Offices
in Detroit and
Newark
(In Canada: SAFETY SUPPLY CO., Toronto)

"Calling All Hands"
FOR
PREVENTO
Protection!

Chemical irritants in cutting oils are an ever-present threat to sensitive hands. To help eliminate the hazard of skin irritations which may lead to dermatitis, hands need a protective coating—applied *before* working periods so that it affords full protection between hand washings.

PREVENTO provides such a coating. Different types are available for different cutting preparations and shop conditions.

PREVENTO is convenient to use . . . spreads quickly . . . gives hours of dependable protection . . . has a refreshing odor . . . vanishes upon washing. *Here's low-cost insurance against slowdowns and lost working hours resulting from painful skin irritations.*

Write for folder "How Long Can They Take It?" and see your DOLGE SERVICE MAN for our cutting oils analysis service.

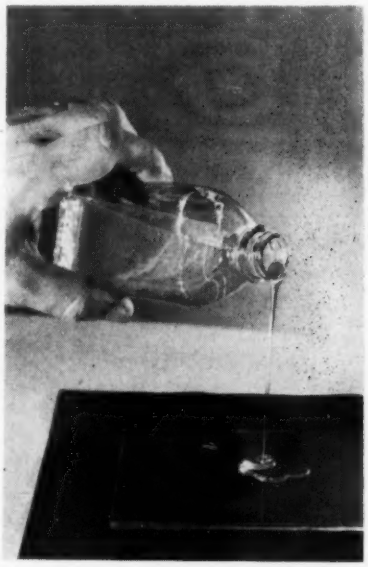
PREVENTO
THE C. B. DOLGE CO.
WESTPORT, CONNECTICUT

num grill, which actuates pumps throwing a fine mist spray on the user's pedal extremities. The Peda Spray Dispenser automatically avoids the problem of maintaining a proper chemical concentration within a foot bath—likewise it avoids the unappealing factor of stepping into solution used by others. It is claimed that by reason of the spray manner of application, over 3,200 people receive the preventive spray from each gallon of Peda Spray Solution, which leads to the manufacturer's claim of economy in addition to the psychological appeal.

INDUSTRIAL HAND CLEANERS

NP 187—LIQUID HAND CLEANER—Of interest to all industrial plants is the announcement of PLY-KLEENER, the new "No scrubber", fast acting, non-irritating liquid hand cleaner announced by Milburn Company. The liquid cleaner removes resins, heavy grease, amiline dyes, inks, paints, lacquers, etc., from workers' hands quickly, harmlessly, and completely, without the use of "scrubbers", harsh soaps, or solvents. PLY-KLEENER is made to function freely in ordinary liquid soap dispensers.

NP 188—LIQUID CLEANING COMPOUND—"Kadol" is the name of the



new cleaning compound developed by the C. B. DOLGE Company for

NEW
JUSTRITE
FLEXIBLE HOSE
ATTACHMENT

The new Justrite flexible metal pouring hose fits all models of Justrite safety cans of ½ gal. and larger capacity made since November, 1945 . . . gives an added measure of safety and convenience in pouring flammable liquids . . . makes these cans even more usuable.

Converts any
JUSTRITE SAFETY CAN
(of ½ Gal. and Larger Capacity)
into a
FLEXIBLE SPOUT CAN

The attachment is easily bolted on or removed. Hose may be turned to any convenient position for easy pouring . . . it's rigid enough to remain there. The new Justrite flexible hose attachment lists at $1.98. Every user of Justrite safety cans will want several now!

JUSTRITE MANUFACTURING COMPANY
2063 N. Southport Ave., Dept. C-3 Chicago 14, Illinois

use on linoleum and cork as well as thick, concentrated liquid, it pours easily and works easily. Kadol is recommended for general cleaning. It dilutes in water at the rate of two ounces to the gallon. It provides a polish if dry mopped and leaves no clinging odor.

NP-189—INTEGRATED SOAPS— The Lightfoot Schultz Company have developed an industrial hand cleaner which welds scrubber and soap to form a single, integrated, indivisible unit. The Lightfoot TREET is a fine grind soap for heavy duty and the Lightfoot COMMODORE is a coarse grind soap for extra heavy duty.

Scaffolding

NP 190—PORTABLE SCAFFOLDING—A portable scaffolding for gable-roofed buildings that combines safety with time-saving conveniences is being manufactured by the Jackalator Corp. With two ladders that reach the highest point required and the Jackalator unit one can work from the top down to the bottom without any other set-up. The device does away with ladder brackets, planks hung on the ladders, the necessity of carrying planks up the ladders to hang on brackets and shifting position for every four or five foot drop. 20 inch width platform enables accommodation of all working materials, room to move around and assurance of safety. Additional safety is provided by guard rail.

NP 191—SINGLE POLE STEEL SCAFFOLDS— The Safway Steel Products Co. are now manufacturing their Safety Single Pole Steel Scaffolding for use in painting, siding, roofing, tuck-pointing and light maintenance jobs. This light, flexible equipment consists of an assembly of tubular steel poles fitted with bracket arms and wall plates joined together by coupling beams and set on an adjustable base. These adjustable bases allow for compensation on uneven terrain and adjustment to various working levels. Units fold up into light, compact bundles for easy transportation and storage.

Light, General Industrial

NP 192—During the past year General Electric Co. have developed special mercury lamps, designed for industrial use. Among the advantages listed for General Electric Mercury Lamps are:—Lowest cost of lighting, fewer lamps needed in an installation, reduced cost of maintenance, and a type of light that blends well with daylight and other

Protect Your Workers With This Glove

No. H51

Has many different uses. Leather is genuine split horsehide, resists heat, pliable, durable. Successfully used for years by welders, burners, sheet metal & iron workers, pipe fitters, boilermakers and others.

Overall length 12 inches. Sizes 8, 9, 10, 11, 12; Price $2.25 pair (discount on quantities). Write for free illustrated catalog featuring a special glove for every job.

Manufacturer & Distributor

WICX-MERIT GLOVE CO.

1085 Mission Street
San Francisco 3, California

GUARD AGAINST DERMATITIS

with **PLY** *the Before-Work Protective Cream*

14 Ply Formulas Meet All Recognized Industrial Dermatitis Hazards and Irritants

PLY is the registered name for the line of creams and liquids which provide *instant protection* against specific types of industrial skin hazards. PLY provides an invisible coating over the skin wherever applied protecting it like a glove from harmful irritants.

If you are not familiar with the wide range of PLY protection, we urge that you get the facts by writing for your copy of our book "The Answer to Industrial Dermatitis."

The only reference book of its kind "The Answer to Industrial Dermatitis" is of inestimable value to all concerned in combating industrial dermatitis.

PIONEERS IN RESEARCH FOR PREVENTION OF INDUSTRIAL DERMATITIS

THE MILBURN COMPANY

3246 E. WOODBRIDGE • DETROIT 7, MICH.

light sources. For the industrial manager who wants the most light for his money, these mercury lamps are suggested by General Electric engineers.

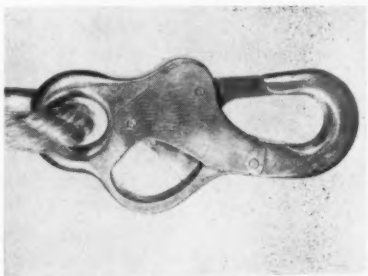
NP 193 — FLUORESCENT LUMINAIRE— The New Hinged Glass Aristolite has recently been announced

by the Edwin F. Guth Co. and features "minute maintenance." A servicing tool, as shown in the cut, is used to clean the hinged glass Aristolite from the floor. One end of the tool is a simple gripper for opening and closing the glass panel. On the other end is a duster for cleaning the fixture. The Hinged Glass Aristolite makes easy work of maintenance and cleaning and in addition, provides an additional extra measure of safety not ordinarily found in glass-type fixtures. The hinged glass panels are easily removed or reattached and when open lay securely at the side of the fixture.

NP 194—CEILING LIGHT— A more compact, easily installed fixture of low wattage, which gives a clear, even light is a result of improvements announced by Homecraft Electronics Products in their Fluorescent Ceiling Light. These improvements include lamp holders of clear plexiglas now completely recessed. Zinc bases of lamp holders are recessed, leaving no parts exposed. The bulb is brought closer to the reflecting surface and unit is more compact. The light is a 32 watt unit, 12 inches in diameter, which equals the output of an ordinary 100 watt bulb. The unit is approved by Underwriters' Laboratories.

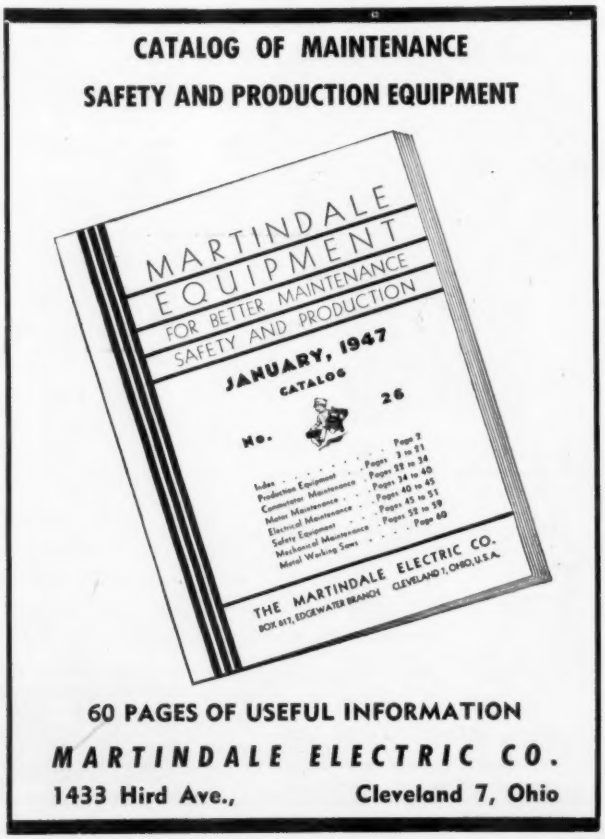
Miscellaneous

NP 195 — SELF-LOCKING SAFETY HOOK— A safety hook that cannot accidently become unlocked, yet is readily releasable, has been announced by the Regan Forge & Engineering Company, holders of the



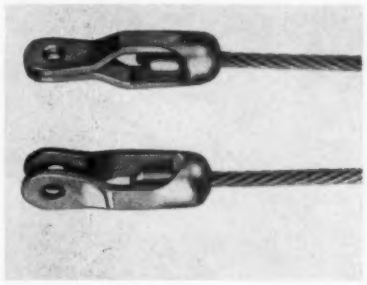
patent. This self-locking hook has a fulcrumed latch finger that closes the opening into the hook. The latching finger has also an effective interengagement with the free end of the

SEE OUR DISPLAY
NATIONAL Safety CONGRESS
The complete line of Edmont Fabric Lined Rubber Gloves will be on display. See the New "Redmont," a finer, heavy duty work glove in 10", 12", 14" gauntlets and knit wrist styles.
HOTEL STEVENS
CHICAGO OCT. 6 TO 10
Edmont
Fabric-Lined
RUBBER GLOVES
Edmont Manufacturing Co. Coshocton, Ohio



hook which enables it to effectively resist laterally impressed strains or pressures. USES: Linesmen's safety belts, towing, well drilling and general hauling and loading. Hook has load capacity of 900 pounds.

NP 196 — CABLE TERMINALS — Macwhythe Company are now making the "Socketype Cable Terminals" which consists of an alloy steel cadmium plated eye or fork type fitting,



plus a stainless steel sleeve for swaging to cable (wire rope). They have been approved by the Civil Aeronautics Administration for use at 100% of the rated strength of the cable to which they are properly attached. They provide a safe, smooth, foul-free installation.

NP 197—DRY FLOOR SCRUBBER— Brushes on the new Finnell Dry Scrubber never become dull while on the job. A flip of the switch reverses the motion of the brushes and re-sharpens them automatically This eliminates the need for frequent changing of brushes by hand in order to maintain a good cutting edge. Automatic reversal of the brushes also helps keep them functioning efficiently by ejecting sticky substances that may otherwise tend to clog and slow down cleaning process. The machine is adaptable to wet scrubbing, steel-wooling, waxing and polishing.

NP 198—TRANSPARENT APRON— The United States Safety Service Company have developed a new, transparent apron made of Vinylite, a plastic material which is resistant to deterioration, easy to clean, economical and tough. "Tuffy" Aprons are made in sizes to fit both men and women in various thicknesses to meet the demands of various jobs. Oil, acid and grease resistant.

NP 199—HERMETIC WATER COOLERS— A new hermetical electric water cooler with a completely sealed refrigeration system is announced by Cordley & Hayes. The cooler is refrigerated for life. Freon-12 is permanently sealed in the system. Construction simplifies installation as cooler arrives ready to connect to water lines and plug in current supply. Hermetic construction eliminates necessity for gaskets and valves. Dial temperature control is furnished. The new Cordley cooler complies with requirement of U. S. Bureau of Standards and is approved by Underwriters' Laboratories and Canadian Standards Association.

NP 199A—AIR VELOCITY METER— Because current advancements in industrial hygiene call for ever closer control of air movements, the Illinois Testing Laboratories Inc. have developed the new ALNOR VELOMETER for accurately checking air flow conditions. The instrument is said to be the only instantaneous direct-reading air velocity meter. Accurate in all ranges, compact, portable, easy to understand and use, the instrument is built for hard industrial usage.

PROTECTION
FOR YOUR WOMEN WORKERS

KORONET HAIR GUARDS

VISOR EYE SHIELD STYLE

Available once again . . . a pre-war favorite with post-war improvements. Preferred by all women workers. Features:

- Protection against loosened hair falling or getting caught.
- Neat attractive glossy Ethofoil Eye Shield is non-inflammable.
- Comfortably light, fits snugly, adjustable to any head size.
- Economical—no starching or ironing—pays for itself in laundering savings alone.
- Sanitary . . . allows for natural air circulation. ....

Added Advertising Value
Any trademark, name or slogan you desire can be imprinted on the shield in color.

Some Newest Users of KORONET Hair Guards
Aluminum Seal Co. . . . Avondale Mills, Inc. . . . Canadian Cellucotton Co. . . . Chicago-Latrobe Twist Drill Wks. . . . I.T.&T. (Federal Telephone & Radio Corp.) . . . Firestone Tire & Rubber Co. . . . Gillman Engineering Works . . . Massillon Aluminum Co. . . Ecko Products Co. . . . General Elec. Co. (Ohio Lamp Works) . . . Ludlow Mfgr. Co.

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Announcing THE TAMPAX VENDOR ...Dispensing

TAMPAX* INTERNALLY-WORN SANITARY PROTECTION.

YOUR WOMEN'S RESTROOMS SHOULD INCLUDE . . . .

our new sanitary protection service designed for modern women. Your employees will welcome this new equipment. The TAMPAX VENDOR dispenses 25 individual cylindrical tubes, each containing one Regular TAMPAX with applicator and instructions for use.

Other Hospital Specialty Company Products: GARDS and FEMS Sanitary Napkins and Dispensers.

Perfected by a doctor, TAMPAX is made of pure surgical cotton compressed in dainty applicators. Worn internally, there are no belts, no pins, no pads. Tampax is disposed of quickly and easily.

**Reg. U. S. Pat. Off. Tampax Incorporated N. Y., N. Y.*

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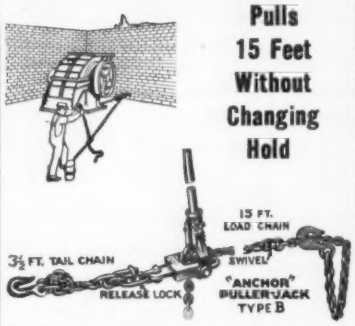
THE HOSPITAL SPECIALTY CO.
1998 EAST 66th STREET · CLEVELAND 3, OHIO

One Man Moves 5 Tons with the ANCHOR Puller-Jack!



Pulls 15 Feet Without Changing Hold

Here's a one-man gang that quickly repays its price in labor, time and money saved. Has 3 tons direct pulling power, or 5 tons with sheave block. Can be operated upright, sideways or upside down, with lever pull away from load or toward it. Simple, strong, foolproof. Practically nothing to get out of order. Positive action, always holds. Compact, quick and easy to set up and use. Hundreds of uses for this powerful tool wherever heavy objects must be moved. Order an ANCHOR Puller-Jack today, or write for descriptive catalog.

$57.50 F. O. B. Bowerston, Ohio. Jack complete with 3 ft. steel tube handle, 15 ft. load chain with slip hook, and release lock. Longer chains available.

THE NOLAN CO.
(Formerly The Mining Safety Device Co.)
DEPT. O.H. . . . BOWERSTON, OHIO

HOLLYWOOD TURBANS

FIRST CHOICE:
With Women—
With Safety Engineers—
Here is a safety device that doesn't take any missionary work to get employee approval. This neat, smart turban is colorful, cool, and washable. Protects hair from lint and dust besides ending danger of scalp injuries. Write for illustrated folder.

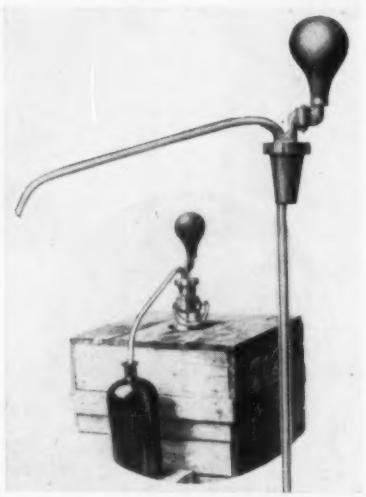
HOLLYWOOD TURBAN PRODUCTS CO.
319 W. Van Buren St. Chicago 7, Ill.

NP 200—POCKET RESPIRATOR— Outstanding among the new products displayed at the National Safety Congress by Mine Safety Appliances

Company is the M.S.A. Pocket Respirator. This compact, mouthpiece-type respirator features a replaceable chemical cartridge, and affords respiratory protection for the wearer against light, intermittent concentrations of acid gases or organic vapors encountered on a variety of jobs in industry.

Carried in the pocket or worn around the neck, the M.S.A. Pocket Respirator is always ready for instant use. It is constructed of corrosion-resistant materials, affords long service life, and is easy to maintain.

NP 201—ACID PUMP— A safe method of acid handling is provided by a manually-operated acid pump,



supplied by the General Scientific Equipment Company, which is find-

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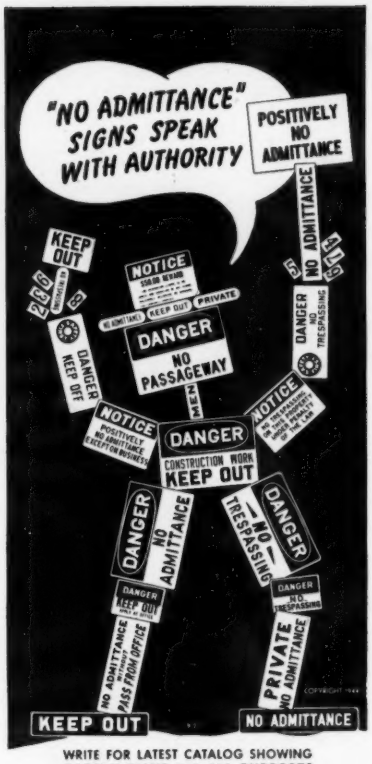

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"All Purpose"
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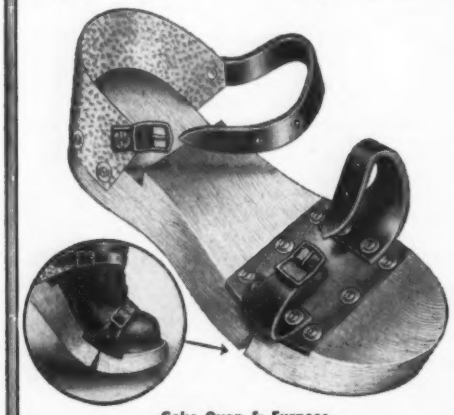
No. 504-S

Heat Proof . . . . Water Proof . . . . Puncture Proof . . . .



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● Reece's "All Purpose" steel toe safety shoe offers the greatest amount of comfort and protection against all factory and foundry hazards.

For Factory or Foundry

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Regular Improved Foot Guard

Foot Guard equipped with Full Sole

WHY SMASH INSTEPS?

***"SANKEY"* Foot Guards protect the instep as well as the toes, that is, the entire foot.**

Note the NEW longer anti skid toe clip and the NEW full sole.
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ELLWOOD SAFETY APPLIANCE CO.
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Combination Foot-Shin Guard

Toe Guard

Fibre Shin Guard

SAFETY SHOES

(Continued from Page 34)

To be effective, soles and heels of conductive safety shoes must be kept clean at all times. Oils, greases, dirt, etc., may impair the effectiveness of conducting shoes.

Protection Against Slipping Hazards

Styles of safety shoes complete with box toe are available which embodies a sole to be used on smooth floors where lack of traction may cause slips and falls. Such jobs include construction work on bridges, ships and docks, some departments in creameries and dairies, ice plants, packing plants and canneries. The sole is treated with a raised design to grip the floor and is particularly useful to stevedores, truck drivers, ice men, and others who find wet and slippery floors a constant hazard.

Exposure to Oils and Chemicals

When ordinary shoes are constantly worn while working on floors which are saturated with oils, greases and cutting compounds, the leather soles deteriorate and rubber soles decompose resulting in foot discomfiture, skin rash and a pair of useless shoes. Safety shoes are available which have specially designed soles resistant to prolonged exposures to oils and chemicals.

Whatever type hazard the analysis of plant activities might reveal, the chances are strong that there is a special type safety shoe to combat the hazard. This includes all rubber safety shoes and shoes with wooden soles which, incidentally, play an important part in the safety shoe field. Wooden soles give protection to personnel exposed to extremes of hot, cold or damp floor conditions. They are designed to keep the feet at normal temperatures and free from dampness where duties must be performed under these conditions.

Easily removable and adjustable metal foot guards will give protection to the toes, insteps and ankles where the occupation involves the handling of very heavy materials.

Fitting Safety Shoes

Regardless of the time and energy expended to determine the type of safety shoe to be worn, the efforts will be wasted unless proper care is taken while fitting the shoe to the worker. Safety shoes are available in various sizes and widths to fit normal feet comfortably. It is essential, however, that the foot be fitted properly if comfort is to be assured. Because the tendency of feet to spread varies with the type of foot, measurements of length and width should always be taken with

SIGNS

for all Industrial Needs

A complete line of stock wordings for warnings, safe practice reminders and general plant notices.

IPCO SIGNS are in reality "silent watchmen" and carry out the thought that we need not so much to be told as to be reminded.

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VICTORY SAFETY CAPS!

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Spacious snood back VICTORY Safety caps cover all the hair without cramming. Cool, light weight and stylish. Blue, brown or white mesh, or dustproof materials. Washable and adjustable.

INDUSTRIAL APRONS

for oils, acids, water, etc.; tough neoprene silver-coated (as shown) for long service. Will stand unusual wear. Also the best in clear "Vinylite" plastic aprons. Excellent for oils, acids, water and abrasion.

Cloth aprons for machinists and shop.

NEW LOW PRICES ON ALL STYLES IMMEDIATE DELIVERY ON ANY SIZE

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the weight of the body on the feet. Some measuring devices are calibrated so that the weight of the body on the feet are not necessary. These are so marked. A properly trained fitter is of vital importance in working out any sort of satisfactory safety shoe program.

Care of Safety Shoes

Shoes should be kept as clean as possible at all times. After wearing, if shoes are soiled with mud, they should be cleaned with mild soap suds and wiped dry if possible. Shoes with upper leather of elk, retan, or similar leather should be treated with animal or vegatable oils, greases or shoe compounds at least once a week to help preserve the leather and render the shoes more water-repellent.

Shoes of smooth-grain upper leather such as calfskin, side, kid, kangaroo, etc., should be regularly cleaned and polished with a high-grade shoe polish or saddle soap.

Shoes may be made more water-repellent by the following treatment:

(a) Melt and mix together
8 ounces natural woolgrease
4 ounces dark petroleum jelly
4 ounces paraffin wax

(b) Stand shoes in the mixture for 15 minutes, deep enough to cover soles.

(c) Mixture should not be hotter than hand can stand

(d) Rub mixture on uppers and wipe clean.

Summary

There are still persons who believe in the theory of safety, but who think a few posters, signs and warnings are all that is necessary. This seems to be an indication that these persons are not giving sufficient thought to the subject of safety, of failing to realize the man-hour losses and money losses to workers and the plant, through compensable foot accidents. In many cases management does not stop and figure the cost of crippled toes. Such executives have never had properly presented to them the high percentage of man-hour losses that result from toe injuries. In both number and severity toe injuries rank high. It is the job of the safety director to get management *and the worker* interested in the safety of feet—to get them to insist that safety shoes are a part of their everyday wearing apparel while on the job. There are ten wonderful reasons why workers should wear safety shoes. Those ten reasons are the ten toes which should stay intact on their feet!

"1001" Styles of Industrial Gloves to Save Workers' Hands

Suit the glove to the job— to cut your costs, step up production

Typical of the outstanding Olympic line is this famous Olympic "Grizzly" fabric glove (#544), designed for handling hot materials, soldering, welding, etc. Surface of knit cloth is covered with soft, sturdy pile of looped threads. Strong—comfortable—washable. 24 oz. weight throughout. For men and women. With knit wrist as shown—also long or short fabric cuff. 2 types of material, water repellent or flame proof. Economical and durable. Olympic work gloves are used by hundreds of leading manufacturers, wherever work stoppage or slow-down is threatened by hand injury. Remember . . . there's an Olympic glove for every job!

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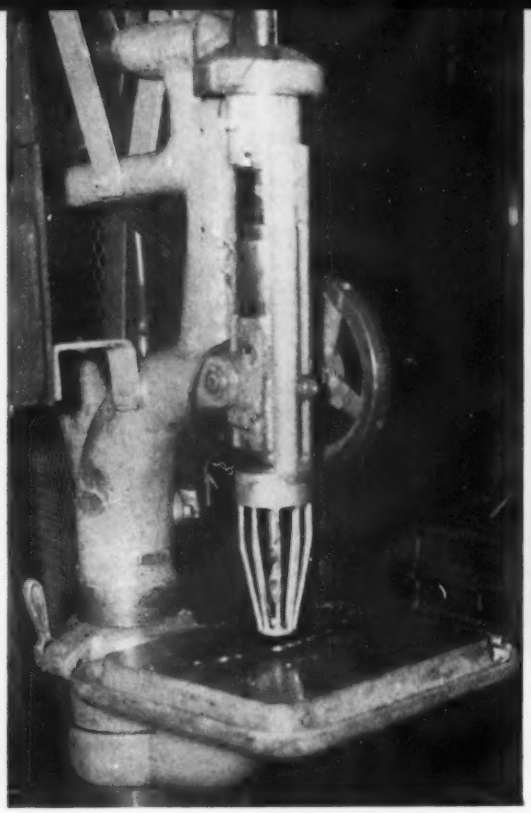

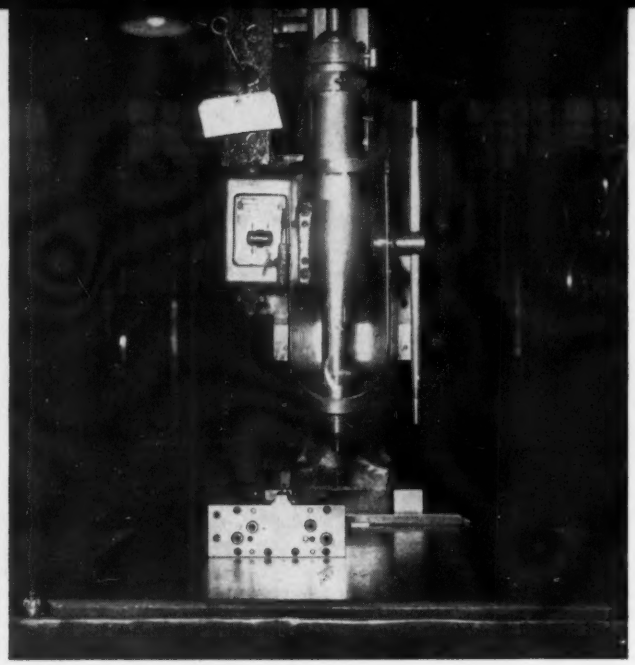

DRILL PRESS GUARDS—Here are two ways in which to effectively guard drill presses. Having much in common, both guards are inexpensive, easy to install, permit work without obstructing operator's visibility, and afford complete protection because they completely encompass the drill while it is at work.

For COMFORT AND SAFETY

DAVENPORT *Wood Sole* SHOES

Only **Davenport Wood Sole Shoes Offer All These Features**

1. Uppers fastened to soles with continuous wire and coppered staples.
2. Vamp crimped to assure perfect fit.
3. Rivets reinforcing all points where strain occurs.
4. Insoles are thick felt for added comfort.
5. Sole leather counters.

Davenport Wood Sole Shoes are especially designed for use where ordinary safety shoes do not afford enough protection. Wooden soles provide sure footing on damp, slippery floors and protection on hot, rough surfaces. Comfort is built in. Vamps and uppers are of pliable oiled grain leather. Counters of first grade sole leather. Soles are close-grained maple cut with correct rock for easy walking. Available with safety toe. Styles for both men and women. Also special line of shower sandals—ready to ship.

FREE! *Complete catalog showing all styles of Davenport Wood Sole Shoes. Write today for your copy.*

F. J. STAHMER SHOE CO.

Dept. K Davenport, Iowa

Do You Know Your Cold Facts?

(Continued from Page 25)

ANSWERS:

1. **TRUE.** You must be johnny-on-the-spot with the vaporizer or steam-kettle treatment to restore natural moisture to mucous membranes that offer the cold virus a perfect medium for growth **ONLY** when they are injured or dry.
2. **FALSE.** Take a laxative only if you actually need one. Over-dosing with cathartics will weaken the patient and increase the feeling of illness without proving of any benefit in curing the cold.
3. **FALSE.** The required daily amount of vitamins is **ABSOLUTELY ESSENTIAL** for the building of normal resistance to colds, but there is no evidence to prove that more than the required amount will build greater resistance.
4. **TRUE.**
5. **TRUE**
6. **FALSE.** Science hasn't been able to prove that alkalinizing makes a difference.
7. **TRUE.** Because you're not only protecting others from the infection but cutting down your chances for complications that result from the common cold.
8. **TRUE.** October is the peak month for colds; heating of homes that first cold day, without regard to humidity regulation, has been suggested as a highly important contributing factor.
9. **TRUE**
10. **FALSE.** Faddy diets are not recommended. A well-balanced highly nutritious diet is best.
11. **TRUE.**
12. **TRUE.**
13. **TRUE.**
14. **TRUE.**
15. **FALSE.** The Influenza vaccine will give you an immunity to Influenza; it will not give you an immunity to the common cold any more than the small-pox vaccine would immunize you to diphtheria.

FIRE PROTECTION FOR INDUSTRY

A SECTION IN WHICH ARE PRESENTED THE VARIED SPECIALIZED PROBLEMS AND SOLUTIONS TO FIRE FIGHTING CONTROL AND PROTECTION IN INDUSTRY

Is Your Boiler Room a Plant Hazard? 52
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Is Your Boiler Room

A Plant Hazard?

HERE ARE FIVE RULES for the safety engineer to check so that he can be sure his boiler room is a safe one, free of hazards to his plant and to the employees of that plant.

1. Maintaining Safe Water-Level 2. Periodic Inspections 3. Isolating Blow-off Discharge Points 4. Good Housekeeping 5. Knowledge of Codes and Regulations

The boiler room is such a common part of almost every industry that it is often given little attention. It is taken for granted. Because of this attitude, the boiler rooms of many industrial plants are potentially hazardous to life and property. A few simple rules can make the boiler room one of the safest places in the plant.

SINCE the early days of the steam boiler, explosion and disruption of the shell has been recognized as a hazard with catastrophic potentiality.

It is absolutely essential to keep constantly on the alert for hidden deterioration and undisclosed physical defects. In order to best accomplish this, it is important that regular internal inspection of boilers be made by a competent boiler specialist. It takes a skilled person to detect flaws, whether in the form of deterioration or unsafe physical defects, which can easily prove disastrous.

As important as periodic inspections are to the safe operation of boilers is the daily inspection and maintenance in the safe operating condition of the various instruments, fittings, devices and pieces of auxiliary equipment. It is the operating engineer's duty to keep a constant check on these things. There are many things he can do to effectively discharge this duty.

Maintaining Safe Water Level

The number one rule for safety in the boiler room is, and always has been, the maintaining of a safe water level inside the shell or drum of the boiler. Modern automatic water level indicators and regulators play an important part in this important function, but the water column and the try-cocks continue to be the reliable source of information on water level. Automatic equipment saves the operating engineer considerable time but being mechanical, they are subject to breakdown. This type of equipment must be checked frequently during each shift to assure safe operation.

There is a tendency to disregard try-cocks and this neglect frequently results in their being unusable when they are most needed. Unless they are checked frequently, they become rusted close, or otherwise inoperative. To prevent corrosion, gumming-up or sticking, try-cocks should be opened and blown at least once each shift to keep them in readiness. They are the only true water level indicators on the boiler. There is one exception to the advantage of try-cocks as a true water level indicator, and that is on high pressure boilers with an operating pressure of 400 psi and upwards. Here it is very difficult, except for an expert, to determine if it is steam or water coming from the jet when the cock is open.

The water column or gage glass is another device that must be blown down during each shift as it is next in importance to the try-cock in determining water levels. If it is blown out frequently it will be kept clear of mud and scale with its subsequent plugging. Because these water gauge glasses can become weakened from corrosion due to chemicals in the water or in the boiler compound, it is good practice to frequently check their condition. The glasses should be removed and carefully examined each time the boiler is closed down for cleaning or repairs. If any defects are found or suspected, then is the time to replace the old glass with new. This is much more convenient than waiting until one lets go on a live boiler. There are on the market special guards to be mounted on glass gauges as an extra precautionary measure.

Isolation of Blow-off Discharge Points

Boiler atmospheric outlets play an important part in the safe operation of boiler rooms. It is important to extend water column blow-down lines down to the floor and into a scupper or covered sump in order to prevent serious burns to personnel. All such lines should be blown into protected sumps so that it is impossible for live steam and hot water to come in contact with employees. This hazard can be minimized by making certain that the safety valve discharge pipe is fitted with an open drain and that the discharge pipe carry the steam high and clear of working areas.

Housekeeping

Efficient and safe operation of the boiler room is contingent upon a clean and orderly boiler or engine room. A few years ago most boiler rooms were horrible examples of good housekeeping, but the recent trend is to make them models of cleanliness and order. Such practice encourages boiler room operating personnel to keep on their toes as far as regular inspections and good operation is concerned. Stock bins, pipe racks and convenient arrange-

(Continued to Page 56)

Fire Protection Includes Electrical Maintenance

A good many industrial fires can be traced back to faulty electrical equipment. The Safety Engineer can do much toward reducing such fires by setting up a definite maintenance schedule to be carried out by a qualified plant electrician. It is not practicable to provide a single schedule applicable to all industrial plants. The following chart covers the chief maintenance requirements of the more common classes of electrical equipment.

CLASS OF EQUIPMENT	REQUIRED MAINTENANCE	WHEN	REMARKS
MOTORS	1. Clean windings, ventilating ducts, commutators, and brush rigging. 2. Lubrication. 3. Examine bearings. 4. Check air gap between rotor and stator. 5. Inspect brushes and commutators. 6. Inspect motor leads. 7. Maintain ground connections. 8. General overhaul.	1. Weekly. manufacturer's 2. According to instructions. 3. Daily* Weekly** 4. Weekly* Monthly** 5. Daily* Weekly** 6. Weekly 7. Weekly 8. Semi-annually* Annually**	1. Clean motors operate cooler. Less likely to cause fire. 2. Do not over-lubricate; too much oil is as bad as too little. 3. Proper attention to bearings greatly reduces repair costs. 4. Width of air gap indicates wear of bearings. 5. Arcing at commutators causes expensive wear and is a serious fire hazard. 6. Short circuits occur frequently at this point. 7. Essential for worker safety and proper operation. 8. Blowing or brushing methods cannot remove all dirt. Dismantling of motors is necessary for thorough cleaning.
CONTROLS (switches, circuit breakers, etc.)	1. Keep control equipment clean. 2. Maintain contacts in smooth condition. 3. Examine for worn parts. 4. Keep connections tight. 5. Keep oil at proper level. 6. Check overload devices.	1. Weekly* Quarterly** 2. Weekly* Monthly** 3. Monthly* Semi-annually** 4. Weekly* Monthly** 5. Monthly* Semi-annually** 6. Semi-annually	1. Do not allow dust or dirt to accumulate on high voltage bushings or terminals. 2. Do not lubricate contact surfaces. 3. Worn parts should be promptly replaced. 4. Mechanical connections as well as electrical connections should be kept tight. 5. Replace dirty or gummy oil. 6. Properly maintained overload devices protect against extensive damage to equipment and reduces fire hazard.
WIRING	1. Keep wiring in safe condition. 2. Maintain extensions and drop lights. 3. Keep all boxes (switch, fuse, etc.) tightly covered.	1. Monthly* Annually** 2. Semi-annually 3. Monthly	1. Defective wiring is one of the outstanding causes of electrical fires. 2. Extension and portable cords are subject to severe wear. Replace or repair promptly when found worn. 3. Tight covers prevent sparks from being thrown from this equipment.
FUSES	1. Check size. 2. Keep fuse clips clean and tight. 3. Maintain refillable type fuses. 4. Check fuse cabinets to see if they are tight and doors closed.	1. Semi-annually 2. Semi-annually 3. Semi-annually 4. Weekly	1. Be careful that circuits are not being over-fused. 2. Good contacts will prevent overheating and breaking down of fuses. 3. Do not refill with links of greater amperage than that for which casing is rated. 4. Keep sparks from being blown from cabinet when fuses blow by plugging unused knock-outs and keeping doors closed.
TRANS-FORMERS	1. Keep oil in good condition. 2. Maintain oil at proper level. 3. Check for excessive temperatures.	1. Annually 2. Quarterly 3. Monthly	1. If di-electric strength is less than 18 kilovolts, oil should be reconditioned. 2. If oil is too low, terminals will be exposed and arcing may occur. 3. Temperatures should never exceed 90° C.
LIGHTNING ARRESTORS	1. Maintain good ground connections. 2. Check all connections.	1. Annually 2. Quarterly	1. Resistance should not be over five ohms. 2. Inspect all connections in early spring and once or twice during lightning season.

* *Important equipment; equipment exposed to damp or dusty conditions; excessive wear and tear anticipated.*

** *Equipment operating under normal conditions.*

Truck Operations in *Hazardous Areas*

There are certain precautions to be taken by the person responsible for plant fire safety when industrial trucks and tractors are operated in areas involving flammable gases and liquids, dusts and concentrations of fibres. The Associated Factory Mutual Fire Insurance Companies have set up certain standards and recommendations to be followed which can aid the safety engineer in setting up his fire prevention program.

FIRES and explosions result when flammable materials, gases and liquids find a source of ignition and unless a few simple precautions are taken, industrial trucks and tractors may be that source of ignition. Industrial trucks can be fitted with safeguards which minimize fire hazards when they are used in hazardous areas.

Approval Standards

To conform with standards, truck design must incorporate the following features:

(1) Proper arrangement of fuel systems to avoid ignition sources.

(2) Protection of fuel systems against mechanical injury.

(3) Elimination of grease-and oil-collecting pans and pockets.

(4) Safe arrangement of electrical wiring.

In addition to approved design, the truck must be equipped with the following safeguards:

A specially designed muffler to cool exhaust gases and prevent emission of sparks and flame. The water-type muffler is preferred. The condensing-type muffler is acceptable if the installation of the water-type is impractical.

In a water-type muffler, the exhaust is directed against a water surface which extinguishes sparks and cools the gases. Maintenance of water level is essential.

Condensing mufflers have extensive cooling surfaces. Hot carbon particles are dropped out by changing the direction of the exhaust gas discharge. Efficiency is lowered after the temperature of the surface is increased by continued heavy-duty service.

A fill and vent fitting to protect the vapor space of the fuel tank and to allow for displacement of vapor under normal and emergency conditions. This device includes a flame arrestor consisting of two concentric perforated brass tubes which project into the fill pipe. The cap cannot be removed from the fitting and a spring makes it snap shut when released.

(Continued on Page 56)

A flame arrestor on the carburetor air-intake to prevent discharge of flame in the event of a back-fire at this point.

A metal sediment bowl, if sediment bowl is required in the gasoline supply line.

Operation, Inspection, and Maintenance

Refuel outdoors in a safe location. Overfilling the tank and spillage of gasoline can lead to serious fires.

Store idle trucks in a garage or in locations away from stored combustible materials.

Establish a regular maintenance schedule, generaly on a weekly basis. Inspect and service the motor, brakes, electrical equipment, and mechanical features in accordance with manufacturer's instructions. Keep trucks free of excess grease and oil. Prevent lint from accumulating on the engine or from interfering with proper operation of air-cooled engines. Do not remove detachable parts such as shields, covers, and safety devices except while truck is being repaired.

Operators should be well-trained, responsible individuals, who appreciate the hazard of improper maintenance and careless operation.

Battery-Powered Trucks

Deteriorated wiring should be immediately replaced upon discovery.

Good maintenance is necessary and the equipment should be serviced frequently.

For extra-hazardous locations involving flammable vapors or dusts and requiring safety-type electrical equipment, special trucks with dust-tight or explosion-resisting enclosures for motors and switches are available.

Portable Fire Equipment

Each gasoline-type or battery-powered truck should be equipped with a 4-lb. CO_2 extinguisher or a vaporizing-liquid extinguisher of at least 1-qt. capacity.

MEET THE *Chief*...

OCCUPATIONAL HAZARDS will bring to its readers each month the true, inside story of an industrial fire AND HOW IT HAPPENED. Each story will be told by a man who heads the fire department of a large city. These authentic observations by men who devote their lives to fighting fire and to the study of fire hazards are presented to the readers of OCCUPATIONAL HAZARDS in the hope that each story will be of value to those persons responsible for fire protection in industrial plants throughout the country.

This month's guest writer is Chief Charles A. Delaney, who has just completed serving a term as president of the International Association of Fire Chiefs. He heads the fire department of Lakewood, Ohio, a city which has had the unusual distinction of twice winning the National Grand Award for Fire Prevention and twelve times winning the Chamber of Commerce of the United States' first place award for cities of its class. The Chief is justly proud of the record established by his fire department, and Lakewood is justly proud of its Chief.

FALSE FIRE SECURITY

By Chief Charles A. Delaney
Lakewood Fire Department

AFTER the flames and smoke of an industrial fire have been subdued and the fire department attempts to probe for the reason of that fire, it is not unusual to discover that the persons responsible for the fire protection of the damaged plant have put their faith in the effectiveness of their fire prevention program on one or more measures that failed when fire stepped in. They had felt secure prior to the conflagration, but after the damage was done, they discovered that theirs was a false sense of security.

There are several common measures that make up the usual plant fire prevention program. These measures include automatic fire sprinklers, portable fire extinguishers, fire-proof buildings, fire doors, night watchmen, alarm systems, and the like. *All of these are excellent measures, providing that they work when the first sign of fire threatens the plant.*

Many times after the fire it is found that a section or even all of the automatic fire sprinkler system had been shut off a day or so before the fire for repairs or testing. Fires get out of control many times because fire extinguishers were found to be inoperative .when the time came for their use. "Fire proof" buildings have been found not to be fire proof at all. Fire doors have been found many times by firemen probing the blackened ruins to be standing wide open—blocked by a barrel or a piece of pipe! And of course, many fires have been able to get underway at night because the watchman was not capable to adequately perform his duties.

Too often the persons responsible for plant fire protection think their job is done after they have given the problem of fire "token" consideration. It takes much more than token consideration to keep fire under control. After these measures have been taken, after the money has been spent by management to insure plant fire safety, it is up to those persons responsible for fire protection to set up an adequate program which includes constant inspection and supervision to insure that all protective measures are going to work when the time comes for them to do so.

Fire extinguishers *must be regularily inspected* to see if they are filled and if they are in working order. A system must be set up so that when sprinkler systems are shut off for repair they will not remain so. Fire doors should be checked often to make sure that they are not being propped open or blocked in such a way with materials so that they cannot close in case of fire.

There are many things for the plant fire protection man to keep his eye on, but one of the most important things to consider is the night watchman. He is the man who can keep a plant from burning down at night and during the weekend. He should be an alert man, and not a person put on the job because it is felt he cannot fit into a regular day job.

Fire-proof buildings are not going to remain fire-proof if combustible materials are stored in the building. Good housekeeping is part of the job of fire prevention.

Regardless of the building or the contents of the building, they are all subject to fire, and subject to very disasterous fire.

The Phillip Carey Company at one time bought an old lumber storage warehouse to store asbestos pipe covering and other asbestos insulating material. It was felt by management that no precautions were necessary to prevent fire as the contents of the building were known to be "fire-proof." No precautions were taken. Not even a night watchman. The Lakewood fire department responded to a midnight alarm to find the building a raging furnace. Contents

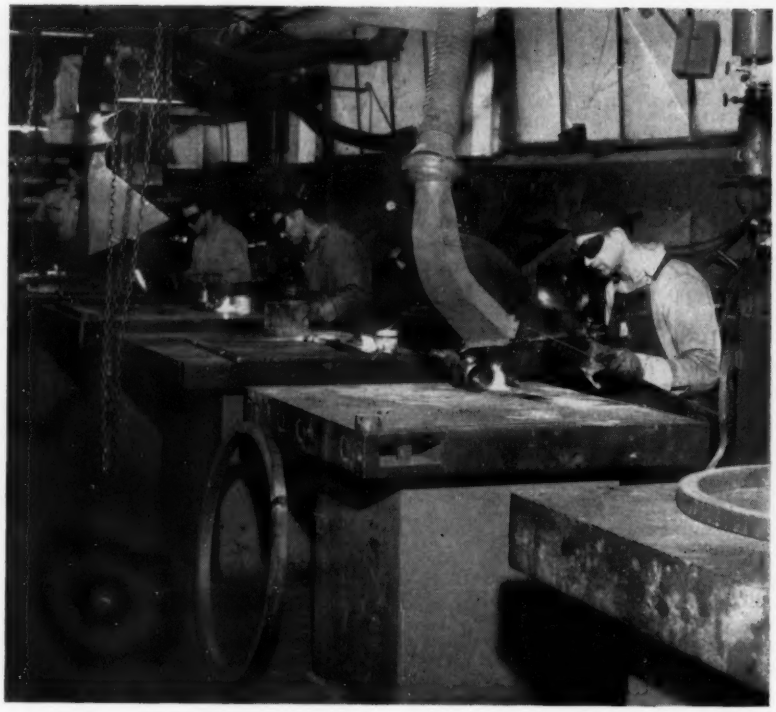
(Continued to Page 56)

GOODRICH ENCOURAGES
Safe Welding Habits

THE B. F. Goodrich Company has long prided itself on being "First in Rubber." An examination of their many welding operations scattered over four different departments reveals that the company may also be out for "First in Welding Safety."

In one corner of the plant they have a group of portable, rubber-tired, oxy-acetylene outfits standing by to be used on jobs throughout the plant. All gauges are checked every 30 days and as an added safety measure, all units are equipped with fire extinguishers.

In the picture to the right are shown a row of six welding benches. Here is where oxy-acetylene cutting and welding takes place on jobs which come into the Weld Shop. Operators are equipped with proper type welding goggles and welder's gloves. The complete safety equipment includes fume collectors, which may also be noted over the tables.



BOILER ROOM HAZARDS

(Continued from Page 52)

ment of tool boards help insure cleanliness and order.

The plentiful use of lighter and brighter colors in painting the boiler room has helped considerably. One of the easiest ways to keep a boiler room clean and free from fire hazards is to paint the messy areas in white. On considering a re-paint job in the boiler room it is desirable to follow a standard system for identification of piping systems such as that established by the American Standards Association Code A-13. This is done by painting live steam mains one color, water lines another and fuel lines still another, etc. This makes identification easy and reduces the possibility of opening wrong valves at the wrong times.

Knowledge of Codes and Regulations

Familiarity with local city and state boiler regulations and the Boiler Code of the American Society of Mechanical Engineers can prevent many costly and dangerous mistakes in the boiler room. The basic rules of the ASME Boiler Code for the foundation of most local codes. When piping is properly hung according to the code, for example, there will be fewer steam leaks and less probability of accidents. To prevent pipe ruptures and joint leaks it is essential that the piping system be adequately provided with means of compensating for thermal expansions.

Safety in the boiler room is dependent on an analysis of the hazards existing and a program designed to eliminate all such hazards. An explosion is a serious matter and serious consideration should be given by the plant safety engineer to make sure that his boiler room does not constitute such a hazard.

TRUCK OPERATION

(Continued from Page 54)

Collision With Piping

Carelessly operated industrial trucks have broken many sprinkler systems. To prevent accidents, plant management should insist upon careful operation of the trucks, particularly high-lift trucks. Clearance of at least 18 inches and preferably 36 inches should be kept between piled stock and the sprinkler system, and substantial guards should be provided where needed at exposed piping near passageways, and at drain, gage, and hose connections to sprinkler risers. Lift-control apparatus should be well maintained. In some cases switches which limit the height of lift are practical.

To minimize water damage when accidents occur, employees should be trained to shut off and drain the sprinkler system promptly, and salvage and repair work should be started at once.

MEET THE CHIEF

(Continued from Page 55)

were supposed to have been "fireproof" but it would have been difficult to prove that upon viewing the destroyed asbestos after the fire was extinguished.

This is merely one example of the many fires that happen all over the country because equipment, personnel, buildings or contents are taken for granted. Everything must be kept under constant check, under constant supervision. Being alert to the possibilities of failure is the only way in which to make a plant fire protection program a success. Fire waits for no invitation to strike. It pays to be on guard at all times!

This famous

BUFFALO *better-built*

FIRE EXTINGUISHER

is the type you need for Class A Fire Hazards

in HEATED or UNHEATED buildings

Carbon dioxide gas generates the internal pressure which expels a powerful stream of clear water 40 to 50 feet from this rugged, long-lived Buffalo *better-built* Fire Extinguisher. Operation is simple and instantaneous. You simply invert the extinguisher, strike it on the floor, thus puncturing the carbon dioxide cartridge.

For heated buildings, specify the Clear Water type; for *unheated* buildings, the Non-Freeze type which will not freeze at 40° below zero.

Both are approved for Class A fire hazards — wood, paper, rubbish, textiles and other ordinary combustibles.

BUFFALO FIRE APPLIANCE

CORPORATION

DAYTON 1, OHIO

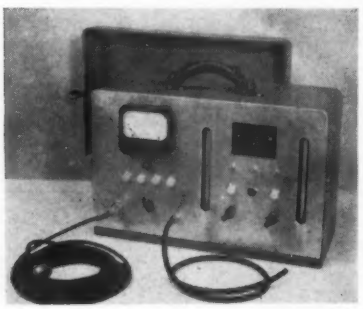
2½ gallons — Polished Copper or Chrome Plated

NEW PRODUCT REVIEW

(Continued From Page 46)

ing wide usage wherever acids must be removed from a carboy, drum or barrel. Corrosive and other liquids flow smoothly and stop instantly when pump is in use. No tilting of the container is necessary and danger of a slip, a splash or a spill is minimized. These pumps are supplied in hand or foot operated models and can be equipped to handle sulphuric, hydrochloric, hydrofluric nitric, phosphoric, acetic acids, peroxide and many other liquids.

NP 202—GAS ANALYZER— For the analysis of gases in their toxic range, Davis Emergency Equipment Co., Inc., have developed an instrument called MICRO GAS ANALYZER.



Many different gases may be analyzed on this instrument. By adjusting controls on the instrument the operator may change from one gas to another. Any gas which will ionize with water or which will decompose with heat may be analyzed by the MICRO GAS ANALYZER.

NP 203—PACKAGED AID KITS AND CABINETS—A complete line of first aid cabinets and kits is now being offered by Columbia First Aiders. They contain only approved, nationally known products and come in substantial containers in sizes for large, medium or small industrial plants. First aid information is a permanent part of each cabinet and kit. Contents are scientifically planned and assembled, easily visable and instantly accessible.

NP 204 — ROACH SPRAY — The Huntington Laboratories, Inc. make announcement of their new product, Huntington Roach Spray, which contains Chlordane, a newly developed roach killer. Besides killing roaches quite rapidly, the new spray has a long-lasting residual effect so that any roaches contacting the treated surfaces for weeks later are doomed to die. The Laboratories have also developed their H-Q Disinfectant. One ounce of this material when diluted with four gallons of water will kill all of the germs of a communicable disease.

NP 205—ILLUMINATED BULLETIN BOARD—The Industrial Products Company have developed an atractive, durable and weatherproof bulletin board designed to hold safety bulletins, plant notices and special exhibits. The "Safety Bulletins" panel is of opalescent glass with the wording sandblasted and filled in with green enamel. Modern lumiline lighting shines through the top panel and over the entire inner area. Mounting board is removable and reversible. Enameled black on one

side so it may be used as a blackboard for special notices. Special sizes or specially worded panels manufactured to meet individual requirements.

NP 206—SAFETY TILE—The American Abrasive Metals Company announce the AMCOLUM Safety Tile as an outstanding development in the safety walkway field. Aluminum oxide, which is next in hardness to the diamond, is the abrasive used in the tile. Its use assures long wear, in addition to a slip-proof walkway surface. It is resistant to impact, acids and alkalies, moisture, oils, greases and stains, and fire. It is applied to existing floors and with a latex type adhesive. Color of tile; red or green.

NEW PRODUCT REVIEW
FIRE SECTION

SAFETY CANS

NP 207—SAFETY CONTAINERS — A new line of safety containers called SAFGUARD is announced by General Detroit Corp. and its West Coast subsidiary, General Pacific Corp. They are available in 1, 3 and 5 gal. sizes and bear the approval of Underwriters' Laboratories and As-

sociated Factory Mutuals for storing and carrying flammable and volatile liquids. They are used for storing and carrying gasoline, kerosene, benzene, turpentine, cleaning fluids and other flammable liquids. Containers are constructed of terne plate lead and coated inside and out and are finished in red enamel. Pouring spout is non-sparking die cast brass.

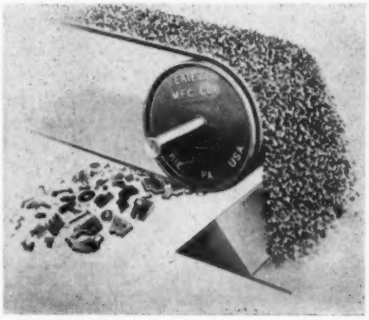
NP 208 — OILY WASTE CANS — Rochester Can Co. have developed a FOOT OPERATED OILY WASTE CAN featuring rigid construction which makes it almost impossible to tip them over. A factory employee in approaching the foot-operated waste can could strike the foot treadle from any direction without any danger of tipping the can and

dumping its contents. It is a tubular self-contained unit made of heavy

gauge galvanized steel. The top is of extra strength. Gravity closing for safety—cannot stay open. Constructed in accordance with U. S. specifications.

EXPLOSION PROOF EQUIPMENT

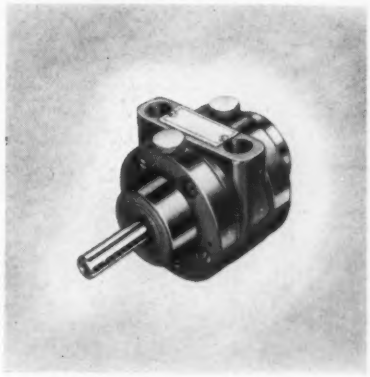
NP 209 — MAGNETIC PULLEY — The first completely energized magnetic pulley requiring no electric current to generate a magnetic field is now being produced by Eriez Mfg. Co. This pulley is adaptable to all applications requiring separation of magnetic from non-magnetic materials or removal of tramp iron from coal, ores, grains, textiles, fabrics, chemicals, etc. conveyed on a belt. These non-electric pulleys are recommended for use in hazardous



locations where possible sparking has precluded the use of electric powered separators.

NP 210 — SPARKPROOF CABLE — A new cable that will not spark when short circuited has been developed by engineers of the U. S. Rubber Company and Leonard Wilson of Kenilworth Mines of Utah. The new feature of the cable is a fine strand of copper wire embedded in the insulation which catches incipient current leakage in the event of cable damage. The wire carries the current to a sensitive circuit breaker which cuts off the power before an arc can occur. It is expected to eliminate a common source of danger in coal mines as cables, trailing on the ground are in constant danger of being damaged.

NP 211—EXPLOSION PROOF AIR MOTOR—Gast Mfg. Co. are now manufacturing their new Model No. 1 Explosion Proof Air Motor which may be used in place of electric motors or portable or stationary equipment as it meets all safety



requirements. The motor starts in any position, will not spark and will not burn out due to overload or sudden braking.

NP 212 — SAFETY TOOL LINE — Ampco Metal, Inc. have developed an extensive line of hand tools, available for use in hazardous locations. Tools are recommended for use in the presence of explosive liquids, fumes, gases or dust as a safety measure. They are all non-magnetic, rustless and corrosion resistant. The tools are made of Ampco metal, a bronze alloy having high tensile strength and controlled hardness. The line comprises over 400 standard tools—a sufficient array to take care of widely varying needs. Special safety tools will be made upon application. Catalog is available describing the complete line.

NP 213—NON-SPARKING SAFETY EYEWEAR—An acetate frame style, designated as model Y-80, is announced by Bausch & Lomb Optical Company, as another unit in its complete line of industrial eyewear.

Offered particularly for use were explosion hazard exists, the frame is made of an acetate material without exposed metal parts, to eliminate

ONLY PIERCE FUSES

have the RUGGED TUBULAR BRIDGE

- TO MAINTAIN BLADE ALIGNMENT
- TO INCREASE FUSE LIFE

Additional exclusive features that mean better protection and lower ultimate cost are:

1. Balanced Lag Link
2. Screened Ventilation

FREE: Balanced Lag Link to inspect and test. Specify amperage, voltage.

possibility of sparking. An additional feature of the new model is a split endpiece design which facilitates quick replacement or exchange of lenses. The frame is available from Bausch & Lomb safety eyewear distributors with all types of Bausch & Lomb hardened safety lenses, in plain, or ground to individual prescription.

NP 214—ELECTRO STATIC PAINTING SAFEGUARD—The Harper J. Ransburg Co. announces an additional safety feature for its electro static spray coating and detearing process. The new safety control is an electronic "spark guard" which will automatically stop the equipment should a piece accidentally approach the discharge electrode, either from swinging, from falling, or from some other dislocation. Although the electro static process is already in use in a score of industries and has created savings averaging 50% through its "Guide-Spray" principle, the added protection afforded by the new control is expected to widen still further the use of this process.

FIRE EXTINGUISHERS AND EXTINGUISHING AGENTS

NP 215—ANTI FREEZE FIRE EXTINGUISHER— Pyrene Mfg. Co. have developed a cartridge-operated 2½ gal. Pyrene soda type and Pyrene Anti-Freeze fire extinguisher. Unlike the 2½ gal. soda acid extinguisher, which needs to be discharged and re-charged each year, these cartridge operated extinguishers are easily maintained by simple examination and by weighing the gas cartridge.

NP 216—DRY CHEMICAL FIRE EXTINGUISHER— A new 4 lb. model dry chemical fire extinguisher known as Ansul 4 is announced by Dugas Engineering Div. of Ansul Chemical Co. The extinguisher, only 19⅛ inches long and 3½ inches in diameter and light in weight, is designed for effective use by inexperienced operators. The extinguishing agent is claimed to be non-toxic, non-corrosive, non-abrasive and a non-conductor of electricity. Extinguisher can be chemically recharged on the spot after use.

NP 217—CLASS A FIRE EXTINGUISHER—The Buffalo Fire Appliance Corp. have added to their extensive line of fire extinguishers a cartridge-type automatic clear water extinguisher for Class A fire

hazards (paper, wood, rubbish, etc.) This extinguisher is built to the same exacting standards as all the other models of this line. They are simple to operate, positive in action and easy to carry. By metering of carbon dioxide gas, pressure is maintained until extinguisher is empty. The gas cartridge must be weighed annually and replaced when weight is less than that stamped on it. Otherwise, the charge is good until used.

NP 218 — MINE FIRE CAR — The new Cardox Mine Fire Car, product of the Cardox Corporation, is now in production for immediate delivery. This new specialized mine fire fighting unit for overcoming deep-seated coal fires provides a quick and effective method for sealing off fires to reduce explosion hazards. Combined in a single mobile unit, the features of the new car include (1) carbon dioxide driven aspirator to ventilate and drive smoke from a room or passageway (2) "Fire Coat", a liquid solution which jells as it is applied, rapidly sealing oxygen from burning surfaces (3) carbon dioxide for quick extinguishment of oily and electrical fires (4) car can totally flood sealed off areas with carbon dioxide, thus eliminating or reducing possibility of explosions in the sealed off areas. The height of the car is only 40 inches and its length 13 ft. 8 inches. It has a capacity of 1500 lbs. liquid carbon dioxide and 200 gals. Cardox.

NP 219—FIRE FIGHTING AGENCY—Arnold Hoffman Co., Inc., have developed a new fire fighting agent "DRENCH", a specially perpared concentrated liquid which, dissolved in water, increases the fire extinguishing efficiency of water between 100 and 200%. Drench may be premixed with water and stored in booster tanks or be added to the line and discharged through a proportionator. It may be used with water extinguishers except those using soda acid and calcium chloride solutions. Drench may be successfully used with any type of nozzle equipment, including straight stream, high and low velocity fog and high pressure fog nozzles. Premixed solutions are stable and will not lose efficiency with storage.

NP 220—C-O TWO FIRE EXTINGUISHER— Power-Pak Products Inc. have developed a new power-pak C-O Two extinguisher small enough to fit anywhere and inexpensive enough to encourage wide use throughout a plant—providing industry with on-the-spot fire pro-

tection. Only 15 in. long, this small sized power-pak unit comes equipped with a wall bracket for placement alongside machines, equipment or materials in danger of electrical, oil, gas or other inflammable liquid fires. The entire unit weighs only 2 lbs. 6 oz. filled.

THERE IS A GENERAL QUICK AID FIRE GUARD for EVERY FIRE HAZARD

Whatever your fire hazard —oil, gasoline, chemicals, textiles, paper, grease, wood, electrical equipment, etc.— there is a QUICK AID FIRE GUARD to fight it. There are five different types of QUICK AID FIRE GUARDS: vaporizing liquid, carbon dioxide, foam, soda-acid, and non-freeze. Each is quickly effective.

Don't take chances. Get QUICK AID FIRE GUARD for every fire hazard.

IF IT'S GENERAL IT'S DEPENDABLE

Wherever you are, there is a GENERAL dealer nearby. Without obligation, he will help you select the right QUICK AID FIRE GUARD for every fire hazard. Look for the GENERAL trade-mark in the classified section of your phone book, or drop a line to GENERAL in Detroit.

THE GENERAL DETROIT CORP.

DETROIT 7, MICHIGAN

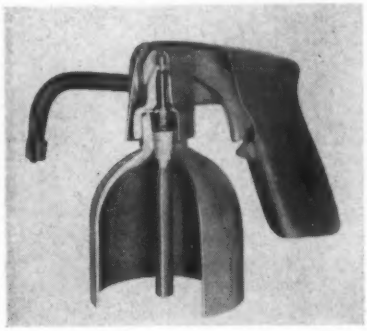
NEW YORK • PHILADELPHIA • ATLANTA • CHICAGO • DALLAS

Subsidiaries:

THE GENERAL PACIFIC CORP.
LOS ANGELES • SAN FRANCISCO • SEATTLE

THE GENERAL DETROIT CORP., CANADA, LTD.
TORONTO • MONTREAL

NP 221 — FIRE EXTINGUISHER VALVE—A new type valve for 2½ and 5 lb. carbon dioxide portable fire



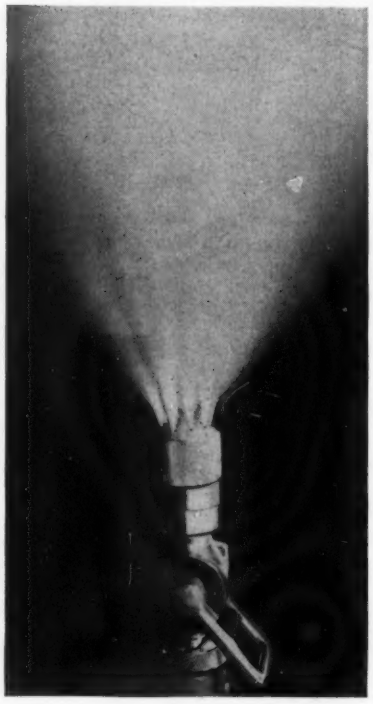
extinguishers is announced by Walter Kidde & Co. Inc. The device incorporates the seat and safety disk in one piece of coined metal, and replacing the old individual safety disk and seat. This new design permits more uniform control of the pressure relief than the old individual safety disk since it is based on accurate coining of a grove in the safety seat disk which will rupture at 2650-3000 p.s.i. pressure. There are no exposed parts, no possibility of freezing or fouling and the extinguisher can be operated easily with only one hand.

FOG AND FOAM EQUIPMENT

NP 222 — FIRE-FIGHTING NOZZLE—Water FOG Cellar Pipe for fighting fires in ordinary combustibles and flammable liquids is announced as a compact, lightweight, corrosion-resistant aluminum alloy unit manufactured by the Rockwood Sprinkler Company, Worcester, Mass. It is designed with arms that extend horizontally to prevent nozzle from dropping through hole prepared for it and also to steady the nozzle when in operation. The nozzle itself is long enough to clear beams, joists and other obstructions, when inserted in a cellar or attic.

NP 223—OVERHEAD FOAM SPRAY EQUIPMENT— National Foam System, Inc., pioneer developers of fire fighting foam, have just made available a new overhead spray deflector system. The new equipment is especially effective over hazards where any flammable liquids are stored, where water sprays would tend to spread the flames and where foam, instead, will quickly blanket and smother the fire. Spray nozzles may be located over individual hazards or spaced throughout the area to be protected. They are recommended to be placed over dip tanks and drainboards, to cover articles on conveyors, protect paint spray booths, oil and gasoline pump rooms and loading racks for diesel fuel or gasoline.

NP 224 — FIRE NOZZLE — Fog Nozzle International, Inc. announce "ALLFOG" water fog nozzle for 1½ in. portable fire hose lines, designed primarily for use on electrical

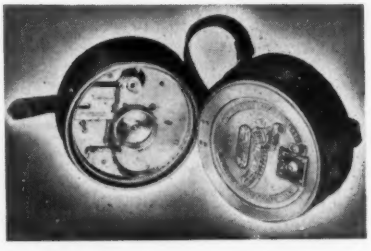


wires involving transformers, wire switches, switchboard panels, motors and generators. Has no straight stream, an engineered safety precaution for the protection of inexperienced operators. At 100 lbs. p.s.i. nozzle has a water fog projection of 20 ft. Underwriters' Laboratories approved.

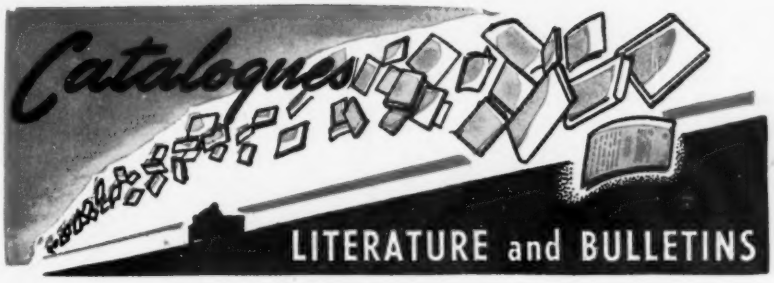
NP 225—OXY-ACETYLENE EQUIPMENT EMERGENCY UNIT—A new portable oxy-acetylene cutting outfit (an improved version of the emergency unit originally designed and produced for the armed services during the war) is now available for immediate delivery through National Welding Equipment Co. The new pack-type outfit will be known as Pak-kut. The entire outfit, complete in every detail and ready for ope-

ration, weighs only 56 lbs. It employs the fastest method known of cutting metal — the oxy-acetylene flame cutting process. The entire outfit is mounted in flame-resistant canvas pack which can be quickly strapped across the shoulders and buckled firmly in a comfortable position. This outfit is designed and manufactured to save valuable time, avoid costly shutdowns and, in an emergency, proves to be a real life saver when twisted steel and jammed fire doors bar the way to rescue.

NP 226—A new portable watchclock solves the problem of weekend and long holiday shutdowns, according to an announcement by Detex Watchclock Corp. The new model is known as DETEX GUARDSMAN. It furnishes an embossed record on a continuous roll of tape and has a capacity for a full two weeks' night and day registration without any possibility of an overlapping record. The clock has an eleven jewel eight-day movement



especially designed for the hard usage to which watchmen's clocks are subjected. Approved by Underwriters' Laboratories and Factory Mutuals.



The publications featured on these pages were written by experts. They may be obtained without charge. To obtain these use the postcard bound into this issue.

FL-162—Safety Tools Ampco Metal, Inc. have prepared an elaborate 27 page booklet describing their complete line of safety tools. Wherever inflammable gases, explosives, or other hazardous conditions are present, and where the striking of a spark constitutes a great danger — a condition unavoidable with steel tools—Ampco Safety tools are needed for use in the presence of these hazards. The line includes over 400 standard tools, a sufficient array to take care of widely varying needs. Special tools will be made up on request.

FL-163—Emergency Cutting Outfit... The National Welding Equipment Company have available a 28-page Instruction Manual for operation of Pack-Type oxy-acetylene emergency cutting outfit. Emergencies are unpredictable. This booklet should be read carefully before the emergency arises. The contents of this valuable booklet might well enable the reader to help save lives. Booklet includes many important "do's and don'ts" to insure quick, safe operation.

FL-164—Accident-Prevention Equipment . . . New Gardwell products catalog consisting of 86 pages is available from The Safety Clothing and Equipment Company. Catalog No. 50 is full of information on industrial safety and accident-prevention equipment. Describes and illustrates hundreds of safety items: Gardwell asbestos, leather, and rubber gloves and mittens; Asbestos, leather, fire-proofed duck, Plastic and synthetic impregnated duck clothing; pants, coats, jackets, overalls, aprons, sleeves, hats, leggings, etc. Also includes descriptions of helmets, hoods, faceshields, belts, shoes, grinding shields, machine guards, acid-handling equipment and many others.

FL-165—Washroom Facilities . . . A new 24 page catalog has just been issued by the Bradley Washfountain Company which presents the complete line of Bradley Washfountains, Multi-Stall Showers and Drinking Fountains. The book also contains full information regarding the new two-person Bradley Duo Washfountain, as well as the redesigned Stainless Steel and Enameled Iron Washfountains which, while discontinued during the war, have again been added to the line. Valuable specification data and washroom planning suggestions are included, and advantages of improved sanitation with definite reductions in maintenance and installation costs are explained. This booklet will be of interest to executives, plant managers, safety engineers and personnel directors.

FL-166—Air Filters . . . The application of replaceable type air filters for ventilating and air-conditioning systems is explained in an eight-page booklet issued by American Air Filter Company, Inc. Descriptions and illustrations of each type filter are given, along with instructions for maintenance and detailed engineering and installation data.

FL-167—Humidity Control . . A colorful, eight page booklet entitled "Humidity Control is more important in your plant than you may realize," has just been issued by Surface Combustion Corporation, explaining the principle of operation and details of application of the Kathabar System of Selective Humidity Control of industrial processing applications. Numerous installations are illustrated including those for food dehydrating, capsulating, making of safety glass, dry blast for foundry cupolas, drying leather, processing of chemicals, etc. A chart illustrates flexibility of operation.

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FIRE HAZARD SIGNS

CAUTION
TO PREVENT FIRE
KEEP ALL TRASH OIL SOAKED WASTE AND DISCARDED CLOTHING PICKED UP AND PLACED IN RECEPTACLES PLACED HERE FOR THIS PURPOSE

THINK
A FIRE TO-DAY
NO JOB
TO-MORROW

FIRE EXTINGUISHER HERE

CAUTION
KEEP ALL TRASH PICKED UP AND PLACED IN THIS RECEPTACLE

TO THE FIRE ESCAPE

NO SMOKING
ALLOWED IN THIS BUILDING
AT ANY TIME
CARRYING LIGHTED CIGARS
PIPES OR CIGARETTES
STRICTLY FORBIDDEN

DANGER
GAS
KEEP LIGHTED CIGARS AND CIGARETTES AWAY

NO SMOKING

Many a worker stands helpless as flames destroy his job. And the worst of it is, the hand of Carelessness nearly always holds the torch.

Fires don't just start themselves . . . they are caused. And every fire is a small one at first.

STONEHOUSE SIGNS

FOR ACCIDENT PREVENTION

teach workers to mentally fight fire before it starts . . . by being careful. Many Stonehouse Fire Prevention signs are shown in our Catalog No. 8. It's Free on request.

SIGNS SINCE 1863

Stonehouse SIGNS, INC.
MANUFACTURERS
842 LARIMER ST. DENVER 4, COLO.

ACCIDENT PREVENTION SIGNS IN STANDARD COLORS AND DESIGNS

MEET THE THREAT OF

Carbon Monoxide

with ACCURATE HAZARD DETERMINATION

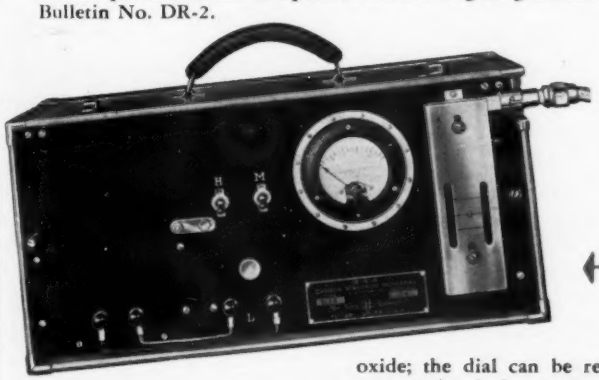
M·S·A CO INSTRUMENTS

M·S·A CARBON MONOXIDE *TESTER*

Employs the most advanced colorimetric method of carbon monoxide determination, as developed by the National Bureau of Standards. Requires only 60 seconds for test. The instrument will indicate CO in air from 0.001 to 0.10 percent by volume. Simple to use without special training—adapted to service wherever accurate determination of low CO concentrations is desired. Write for Bulletin No. DS-4.

M·S·A CARBON MONOXIDE *ALARM*

This instrument continuously samples the surrounding air, and whenever carbon monoxide in air reaches a predetermined amount, the Alarm gives a prompt, loud warning and visible indication. May be set to operate at a predetermined setting from 0 to .04 percent, and may be employed to operate ventilation or process controls. Designed for twenty-four hour service, the unit is completely enclosed in a weatherproof case and is operated from the lighting circuit. Write for Bulletin No. DR-2.



M·S·A CARBON MONOXIDE *INDICATOR*

A direct-reading, compact, portable instrument, with range from 0 to .15 percent carbon monoxide; the dial can be read directly to .005 percent and estimated to .001 percent (equivalent to ten parts per million). Three types available—one with self-contained batteries (illustrated), another for use with outside source of current, and the third a hand-operated model which does not require connections to a storage battery or lighting circuit. Ideally adapted to surveys of industrial atmospheres, interiors of motor vehicles, chemical processes, furnace operations, and similar applications. Bulletin No. DS-3.

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